FEBRUARY, 1956

WOOD and Wood Products

THE NATIONAL MANAGEMENT AND PRODUCTION MAGAZINE OF THE WOOD INDUSTRY

A Vance Publication

FEATURES IN THIS ISSUE

- Sanding Know-How Cuts Costs, Ups Quality
- Automate, Streamline Layout to Save Labor
- Quality Control . . . Is It for Giants Alone
- Conveyorized Lumber Handling Cuts Costs
- New Products—Trends—Dry Kiln Corner—Production Line

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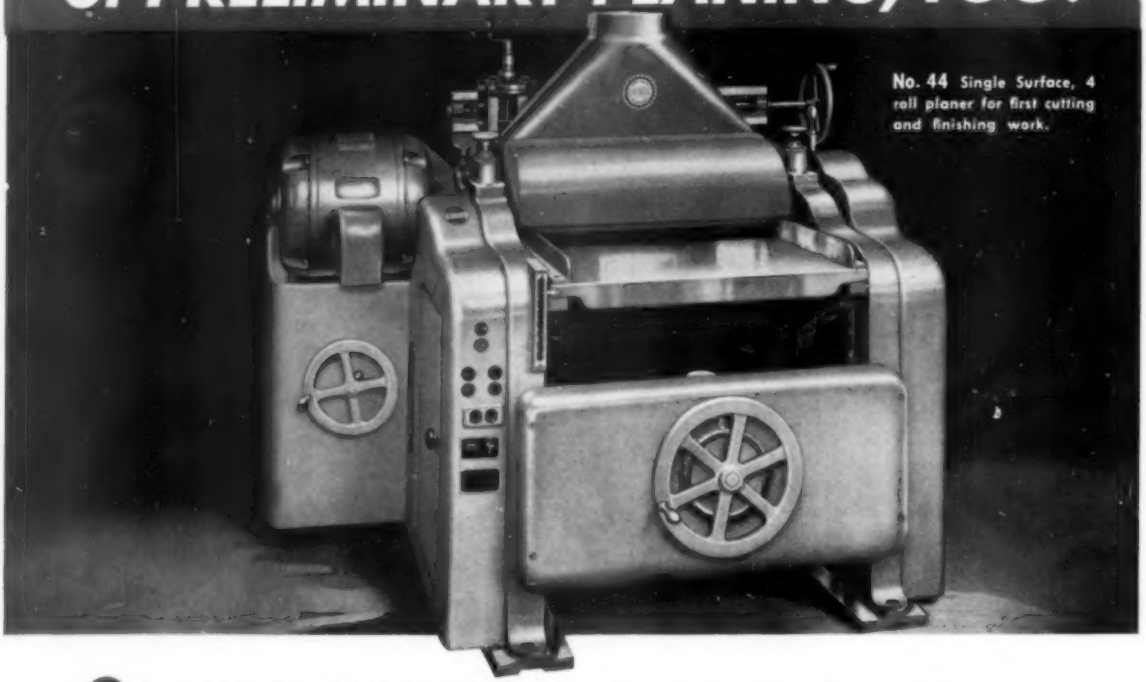

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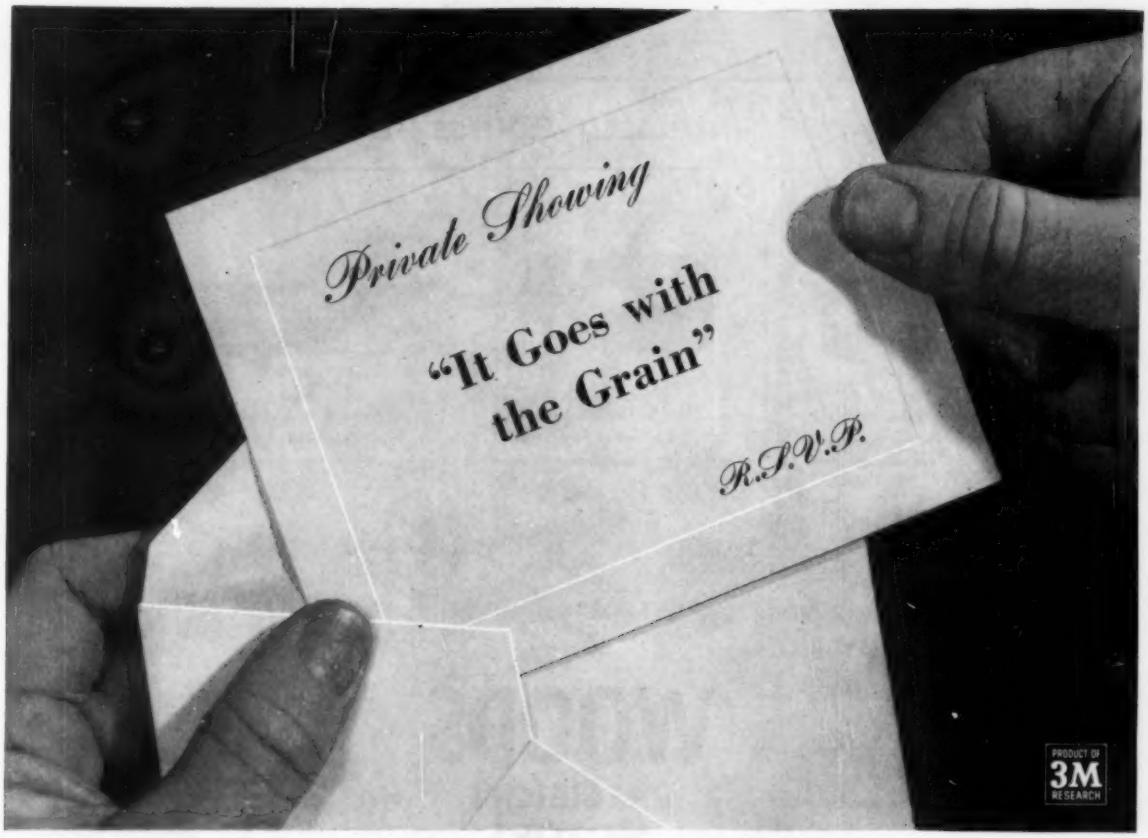

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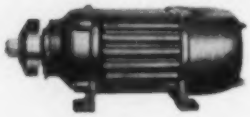

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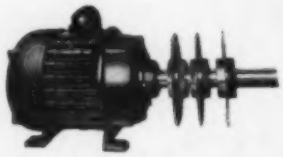

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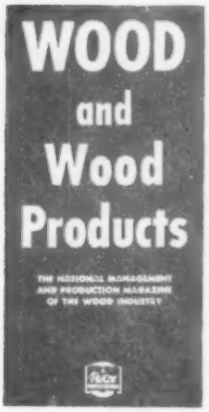

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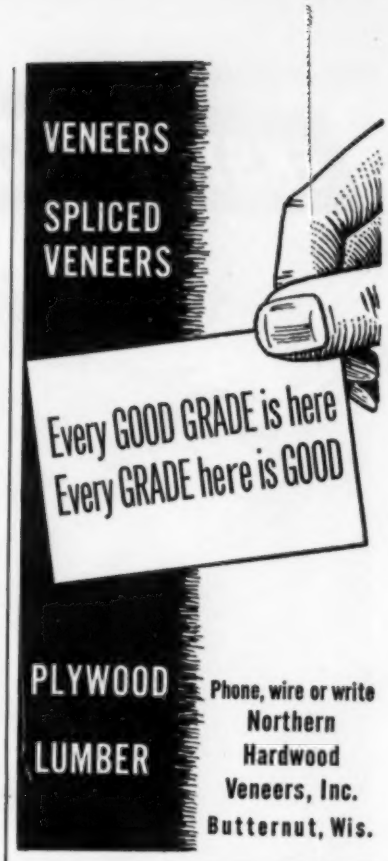

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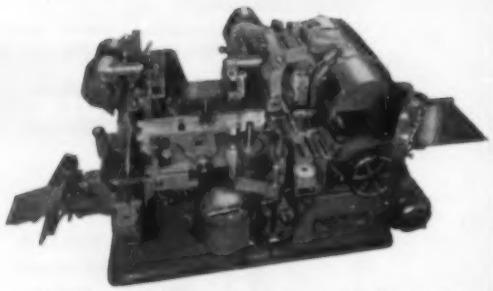

Here is how the *improved* Ekstrom-Carlson HI-SPEED Moulder appears laid open. Note how the swing-out control panel is also a guard for the feed rolls. Note the easy accessibility of cutterhead spindles and the reduction of reach-over adjustments. Note the hinged and adjustable outfeed drop table.

This picture is a close-up of the top cutterhead with the exhaust hood removed. The arrow points to the shaft by which the entire cutterhead is adjusted *from the front of the machine*. Twin jackscrews raise or lower *both ends* of the spindle yoke simultaneously.

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VOL. 61, NO. 2

WOOD and Wood Products

THE NATIONAL MANAGEMENT AND PRODUCTION MAGAZINE OF THE WOOD INDUSTRY

FEBRUARY, 1956

INDUSTRY NEWS . . . AND TRENDS

FURNITURE

JANUARY FURNITURE MARKETS were record breakers. At the end of the two-week Winter Home Furnishings Market in Chicago, manufacturers predicted first-half 1956 sales will climb over the like 1955 period.

Nevertheless, Furniture Industry leaders showed some concern about rising prices, delivery delays, a few scattered material shortages, and the effect of the minimum wage law on the costs of southern producers.

Most serious problem of manufacturers of bedroom furniture is the acute shortage of plate glass mirrors. The shortage is expected to continue for six months. Some producers believe the glass shortage will ease if auto production continues to decline from a year ago.

HOUSEHOLD FURNITURE OUTPUT in the United States in 1955 was 14% greater than in 1954 and almost nine times the volume produced in the industry's darkest year—1932.

Shipments by the country's furniture manufacturers in 1955 reached a new high level of $1,800 million at manufacturers' prices. The nation's furniture output in 1954 totaled $1,570 million, and in 1953—the industry's previous banner year—$1,729 million.

Wholesale furniture prices were stable throughout 1954 and 1955, and the price level at the beginning of 1956 was about the same as at the end of 1953.

FREIGHT RATES on shipments of wood dining room furniture will not be reduced, the ICC last month announced, to that of chromeplated steel furniture. An official explained that the transportation characteristics of the two are not similar. In addition, damage claims for steel items are lower than the national average for all other kinds of furniture.

Giant Patterns Made from Mahogany and Pine

2000 ft. of mahogany and 500 ft. of pine were used to make the 1,500 lb. pattern and another like it for the Construction Machinery Division of Clark Equipment Co. The wood patterns were made at the Warren E. Allerton Pattern Works, Inc., at Benton Harbor, Mich. The pattern will be used to make a steel casting for the circle gear on two new truck excavator-crane models. The upper works rotate on this gear which is welded to the truck

CONSTRUCTION

HOME IMPROVEMENTS—a gigantic new market will be developed by the construction industry in 1956. Federal Housing Administrator Albert M. Cole kicked off the campaign January 16 by designating 1956 Home Improvement Year. Mayors and governors are expected to proclaim Home Improvement Weeks. Many communities and local industries are setting up home improvement centers.

About 40 manufacturers and 27 trade associations are participating in the drive. There will be articles on home improvement in trade publications and consumer magazines. Manufacturers are tying their national advertising in with the program.

It is stated that there are over 48 million dwelling units in the U. S. Of these about 43 million are worth maintaining or restoring, and all of these, it is certain, either need or could benefit by some expenditure for improvements.

RECORD PRODUCTION of 120,000 factory-made houses is anticipated for 1956 by the Prefabricated Home Manufacturers' Institute. In 1955, industry shipments aggregated nearly 100,000 houses, as against the previous record of 77,000 units sold in 1954. The outlook for 1956 sees the trend to prefabrication moving at an accelerated rate. The industry expects to expand its share of the housing market to approximately 12% of the single-family, non-farm housing starts.

Volume-wise, it is believed that the industry will ship approximately 120,000 houses during 1956, assuming that the financing of homes in the lower-price brackets under the FHA and VA programs does not prove a serious problem. This volume of shipments would mark an increase of around 20% over the 1955 unit sales and, dollarwise, the gain would be even greater.

FORESTRY

TREE FARM PROGRAM is being joined in increasing numbers by small private forest land owners, according to E. L. Kolbe, chief forester of Western Pine Assn. He reports that in 1955 the association certified 148 new tree farms totaling 183,436 acres. Of these, 139 were farmer and other small private holdings.

The 1955 additions brought to exactly 800 the total number of Western Pine tree farms in the 12-state timber region and the total area certified to 5,877,069 acres.

ILLINOIS FOREST ECONOMY in 1956 will be sharply stimulated by recent activation of a tree farm program according to A. C. Foley, chairman of the state's Forest Industries Committee.

Eventually, the program of forest management on private timberlands is expected to increase the forest yield by two and a half times. Already forest industries in the state give employment to 70,000 persons with an annual payroll of $234,337,000.

LUMBER

SUBSTANTIAL DEMAND FOR LUMBER was experienced by lumber manufacturers during the third quarter of 1955 according to the Quarterly Report of the Lumber Survey Committee. Demand began to slacken only after the end of the quarter.

Production of lumber was maintained at the high levels established in the second quarter, with a 15% increase over the strike-retarded third quarter of 1954. For the first nine months of 1955, lumber output of 29.7 billion bd. ft. was the highest of any comparable period for the 21 years that monthly records have been kept.

Both lumber shipments and new orders continued to exceed production during the third quarter and in the totals for the first three quarters of 1955, reported the Committee. In the third quarter, both unfilled orders for lumber and gross mill stocks declined. Total retail inventories meanwhile showed little change during the quarter.

Estimated national consumption of lumber is expected to total 43.1 billion bd. ft. for 1955, the highest annual figure registered since the data were first compiled in 1929.

Following are quarterly estimates of total lumber production, based on regional association reports, as prepared by the National Lumber Manufacturers Association:

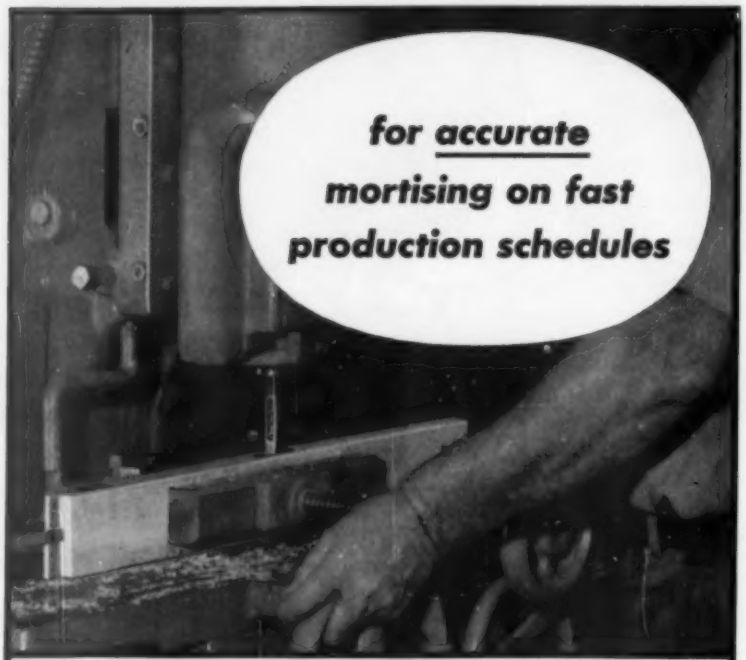
	Softwoods	Hardwoods
	(Million Board Feet)	
Third Quarter, 1955	8,376	1,862
Second Quarter, 1955	8,420	1,869
First Quarter, 1955	7,350	1,795
Fourth Quarter, 1954	7,767	1,835
Third Quarter, 1954	6,992	1,880
Third Quarter, 1955:		
Percent change from Second Quarter, 1955	− 0.5%	−0.4%
Percent change from Third Quarter, 1954	+19.8%	−1.0%
Nine Months, 1955	24,146	5,526
Nine Months, 1954	21,529	5,582
Percent change 1955 from 1954	+12.2%	−1.0%

FLOORING SHIPMENTS by regions for third quarter 1955, second quarter 1955 and third quarter 1954, reported by the Lumber Survey Committee is as follows:

	3rd Qtr. 1955 M Bd. Ft.	% Change from 2nd Qtr. 1955	% Change from 3rd Qtr. 1954
Oak Flooring Region			
Production	312,872	− 1.4%	+ 9.3%
Shipments	314,174	− 2.2%	+ 7.1%
New Orders	303,254	− 2.5%	+ 1.0%
Unfilled Orders (End of Period)	91,074	− 9.1%	+14.2%
Gross Stocks (End of Period)	42,958	− 2.7%	−10.5%
Maple Flooring Region			
Production	12,980	+10.3%	− 0.8%
Shipments	14,800	+10.4%	+ 8.0%
New Orders	14,775	+ 2.2%	+ 2.6%
Unfilled Orders (End of Period)	14,350	− 7.7%	+28.7%
Gross Stocks (End of Period)	7,525	−19.1%	−15.2%

LUMBER PRICES registered a gain of 1.9% during the third quarter 1955 according to the Wholesale Price Index issued by the Bureau of Labor Statistics. Softwoods indicated a gain of 1.7% and the index for hardwoods increased 2.6% during the quarter. Between September and October, the index for all lumber declined 0.2% as the softwood index declined 0.5% while hardwoods gained 0.8%.

WEST COAST LUMBER weekly average production in December was 155,837,000 bd. ft. or 83.1% of the 1950-1954 average. Orders averaged 170,530,000 bd. ft.; Shipments 141,599,000 bd. ft.; Weekly averages for November were: Production 163,139,000 bd. ft.; 87.1% of the 1950-1954



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For these reasons Kennametal saw tips, planer knives, router bit blanks, and molder and shaper blades are able to consistently step up production, reduce unit costs, eliminate excessive downtime, and produce superb wood finishes.

Kennametal carbide tools can mean the answer to your wood cutting problem, which can mean more efficient and more profitable operations. If you cannot get engineering service or carbide tool maintenance information from your present tool supplier, write direct to KENNAMETAL INC., Latrobe, Pennsylvania. 5534

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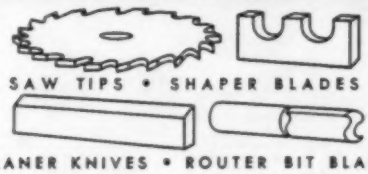

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average; Orders 149,751,000 bd. ft.; Shipments 155,103,000 bd. ft.

Twelve months of 1955 cumulative production 9,609,333,000 bd. ft.; Twelve months of 1954, 8,851,757,000 bd. ft.; Twelve months of 1953, 9,744,627,000 bd. ft.

The industry's unfilled order file stood at 712,057,000 bd. ft. at the end of December gross stocks at 1,067,627,000 bd. ft.

WESTERN PINE INDUSTRY for the second consecutive year set all-time high records during 1955 for production and consumption. But end-of-year slowdowns both in output and demand dropped the year's last quarter figures below those of the same period a year ago and are expected to do the same the first three months of 1956.

Preliminary estimates show the industry's mills shipped about 8,625 million bd. ft. during the past 1955, up 7% from 1954's 8,064 million bd. ft. At the same time, the mills produced 8,678 million bd. ft., 9.1% more than 1954's record-breaking 7,953 million bd. ft.

Estimates show Western Pine region shipment figures for the first three months of 1956 will probably be about 1,675 million bd. ft. or 8% off the pace for the same quarter a year ago.

REDWOOD PRODUCTION and shipment by 20 mills reporting to the California Redwood Association during November, 1955, were: Production 52,165 M ft.; Shipments 51,299 M ft. Comparative figures for November, 1954, show an increase in production of 2,647 M ft. and an increase in shipments of 20,205 M ft. A railroad strike during November 1954 in the Redwood Region severely curtailed shipments.

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VENEER

MAHOGANY LUMBER AND VENEER consumption in 1956, if present consumption levels continue, will be as good as 1955 or better. Although not the highest on record, the 1955 calendar period ranks with some of the top years. It was better than 1954.

Factors that point to a good mahogany year in 1956 include the bright outlook in furniture production; the return of beautiful wood cabinets in the television and radio fields; the new design trend in natural finishes; the quality paneling trend in home building and architecture; and the better materials movement in boat building, occasional furniture and novelties.

VENEER SHIPMENTS in October maintained the lively pace of the past three months. Production, however, registered its second straight decline, falling about 15% below shipments. Total inventory consequently dropped to the lowest point in several years.

There was little change in African mahogany veneer shipments in October. Demand continued at about the same rate as in the past several months. Production, however, failed to keep pace due to skimpy log supplies.

Shipments of cherry veneer posted a new monthly record in October. Ample supplies of this species are on hand, but mostly in medium and low grades.

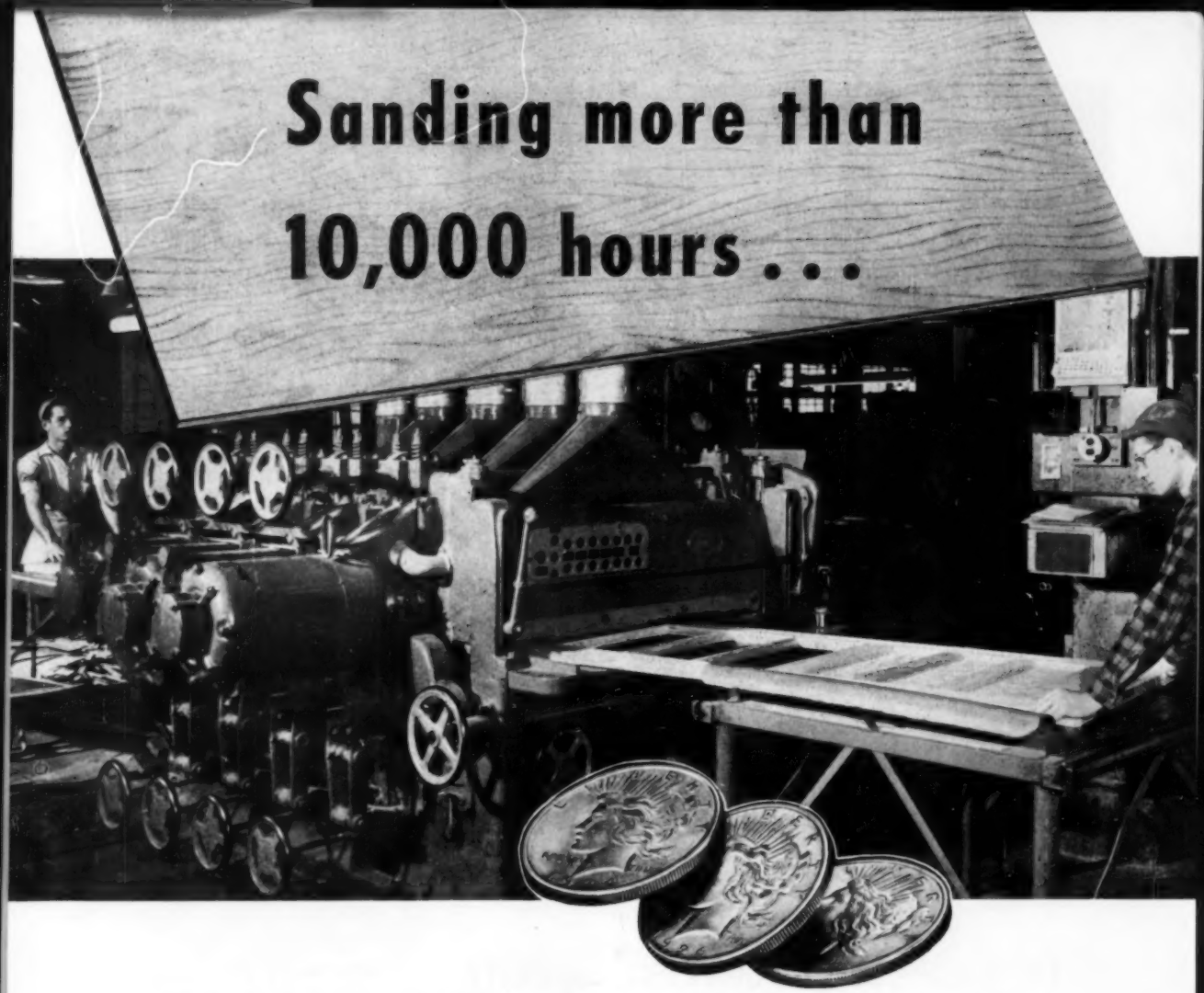
Stocks of walnut veneer declined slightly in October. Shipments maintained the high level of recent months while production slowed somewhat.

WOODEN CONTAINERS

WOODEN BOX PRODUCTION and shook during the third quarter of 1955 was 20.6% over the volume of corresponding period of 1954 according to reports of 119 manufacturers as compiled by the National Wooden Box Association. Following is a summary of production classified by areas for the third quarter of the two years:

	No. of Mills	3rd Quarter 1954 (Board Feet)	3rd Quarter 1955 (Board Feet)
New England	11	10,359,708	12,840,755
East Central	13	7,972,955	8,872,032
Southeastern	15	10,564,560	11,228,242
Central	30	11,733,739	11,869,180
Total East of Rocky Mountains	69	40,630,962	44,810,209
Pacific	44	105,812,000	125,292,000
Inland Empire	16	32,585,000	45,768,000
Total West of Rocky Mountains	60	138,397,000	171,060,000
GRAND TOTAL	119	179,027,962	215,870,209

Sanding more than 10,000 hours . . .



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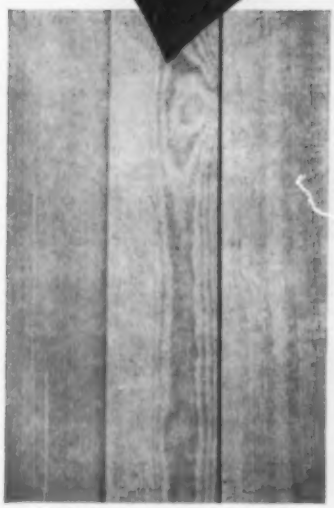
WW-8818

There's more profit for you . . . with lumber like this



This lumber, treated with "Lignasan" remained clean and bright.

This untreated lumber shows the effect of attack by blue-stain fungus.

For Clean, Bright Lumber...Specify Stock Treated with Du Pont

Lignasan® *for stain control* or MELSAN® *for stain and mold*

YOU PROFIT when you handle lumber that's clean and bright. You get a better price for it, there's no downgrading, and no wastage because of trimming.

When lumber is cut, it's subject to blue-stain and mold attack . . . the mills you buy from can prevent this damage, even under difficult seasoning conditions, by treating with Du Pont "Lignasan" or "Melsan."

So, to eliminate rejects, and downgrading caused by blue stain and mold, to speed up selection and customer good will, always specify lumber treated with "Lignasan" or "Melsan."

DU PONT

REG. U.S. PAT. OFF.

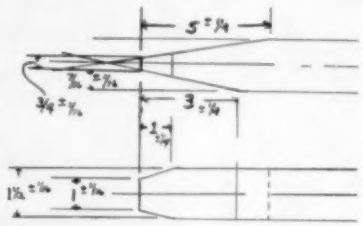
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Wood Puzzlers

This department is designed to help find answers to your production and sales problems. Let us know what information you need. Other readers may be able to help you.—*The Editors.*

191—Special Shaper Cuts

In one of our operations we make four cuts on the tip end of a sweep rake tooth, with two shapers which require four shaper cuts (one on each of four sides) and two handlings of each piece. (See cut.) We have heard



that some manufacturers are doing this job on what might be called a double saw table with one handling of material, and we would appreciate very much your ideas on the most economical method of doing this job. (Iowa)

192—Turned Furniture Legs

We are seeking an additional supplier for simple turned wooden furniture legs. Can you name any in this general area? (Miss.)

193—Wants Pine Falloffs

We would appreciate very much if you could put us in touch with firms who have a falloff of clear pine pieces, minimum size to be 4½ x 12, or multiples thereof. Thickness can be either 25/32 or 1 1/16. (N.J.)

Study Wood Uses Developed by Research

NEW USES FOR WOOD which could be perfected through research were demonstrated at the recent NLMA convention at Washington. Included were: (1) concrete board, made by combining wood excelsior with cement to produce a building block possessing wood's natural insulating values with the structural qualities of concrete; (2) wooden bricks, made from short and narrow cuttings from sawmills or lower grades of lumber; (3) ultrasonic testing of wood wherein sound waves are used to penetrate the lumber to record knots, voids or splits. Lumbermen add that ultrasonics may also have practical application in measuring the smoothness of furniture surfaces and in testing glue lines in plywood and laminated timbers.

For the newest in coated abrasives... watch BEHR-MANNING!

Photo courtesy of Pearson Sanding Machine Company

Garnet Belts clean up rough edges and glued edges at record-breaking speeds.

Metalite Spirabands are favorites for sanding hard-to-get-at places.

Tufbak Paper is tops for smoother wet-sanding between coats.

Sanding...right in the groove

A BEHR-MANNING Abrasive Belt turning on a Pearson Sander does a fast, easy job polishing pen holder grooves in desk tops. Here's one more example of how modern coated abrasive applications provide better finishes at an increased rate of production.

Though your particular finishing operations are probably different, chances are an up-to-date coated abrasive method can smooth the way to increased output and finer finishes. Ask your local BEHR-MANNING Field Engineer to prove the point, he'll demonstrate in your plant or at a nearby BEHR-MANNING Application Room. Call him today, or write Behr-Manning, Troy, N. Y., Dept. WP-2.

In Canada: Behr-Manning (Canada) Ltd., Brantford.
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W-2

BEHR-MANNING® *division of NORTON Company*

▲ COATED ABRASIVES
▲ SHARPENING STONES
▲ PRESSURE-SENSITIVE TAPES

LETTERS to the EDITOR

Sawmill Automation

Editor: We have just seen the article, "Sawmill Automation — What's in It for You?" (Part II), in the November 1955 issue of WOOD & WOOD PRODUCTS. Is it possible for you to send us a reprint of Part I? If not, could you send us a copy of the issue?

—Charles R. Batten, Forester
C & NW Railway System
St. Paul, Minn.

(Editor's Note.—In response to many similar requests, "Sawmill Automation" has been reprinted in a 4-page folder. Single copies available free, quantities at a nominal charge.)

Spiral Wrapping Machine

Editor: In your December issue there was an article on a special type of wrapping machine being used by Williams-Brownell, Inc., Asheville, N. C. I wonder if you can give me the name of the manufacturer.

—J. C. English, Vice-Pres.
M. B. Farrin Lumber Co.
Cincinnati, Ohio

Production Incentives

Editor: Your article in November WOOD & WOOD PRODUCTS on "How Incentives Increase Production" was interesting. I know there are several systems, and books explaining them, and would appreciate names of some books on incentives pertinent to the furniture industry.

—Theodore Bailey, Pres.
Theodore Bailey & Co.
Havana, Cuba.

Wood Particle Board

Editor: We are very much interested in wood particle board, and have been told that recently you have printed several articles on the subject, but we have been unable to locate any copies. If possible, we would like to buy back copies which have this information on wood particle board. We are particularly interested in a copy of December 1955 WOOD & WOOD PRODUCTS.

—Cook & Co., Inc.
Memphis, Tenn.

Editor: Would it be possible for you to send me one or two reprints of the article in your December issue entitled, "Turn Purchased Wood Waste into Profitable Chipboard," which describes the operation of Willamette Fibre & Chip Board Co., Sweet Home, Ore.

—Miller Bros. Co.
Johnson City, Tenn.

Editor: We recently started taking your splendid publication, but we missed the March 1955 issue. It has an article entitled "Chipcore Plant Saves 50% on Core Costs." Would you be good enough to send us a copy of this issue, and bill us for it?

—Portco Corp.
Portland, Ore.

Stanford and Noltemeyer Reprints

Editor: I note that you have assembled, in folder form, reprints of your Stanford Report articles, as well as Vincent Noltemeyer's article, "How to Get Top Yield from Rough Lumber." If your supply has not been exhausted, we would appreciate two copies for selected distribution among our personnel.

—J. K. Herndon, Vice-Pres.,
Kirby Lumber Corp.
Houston, Texas

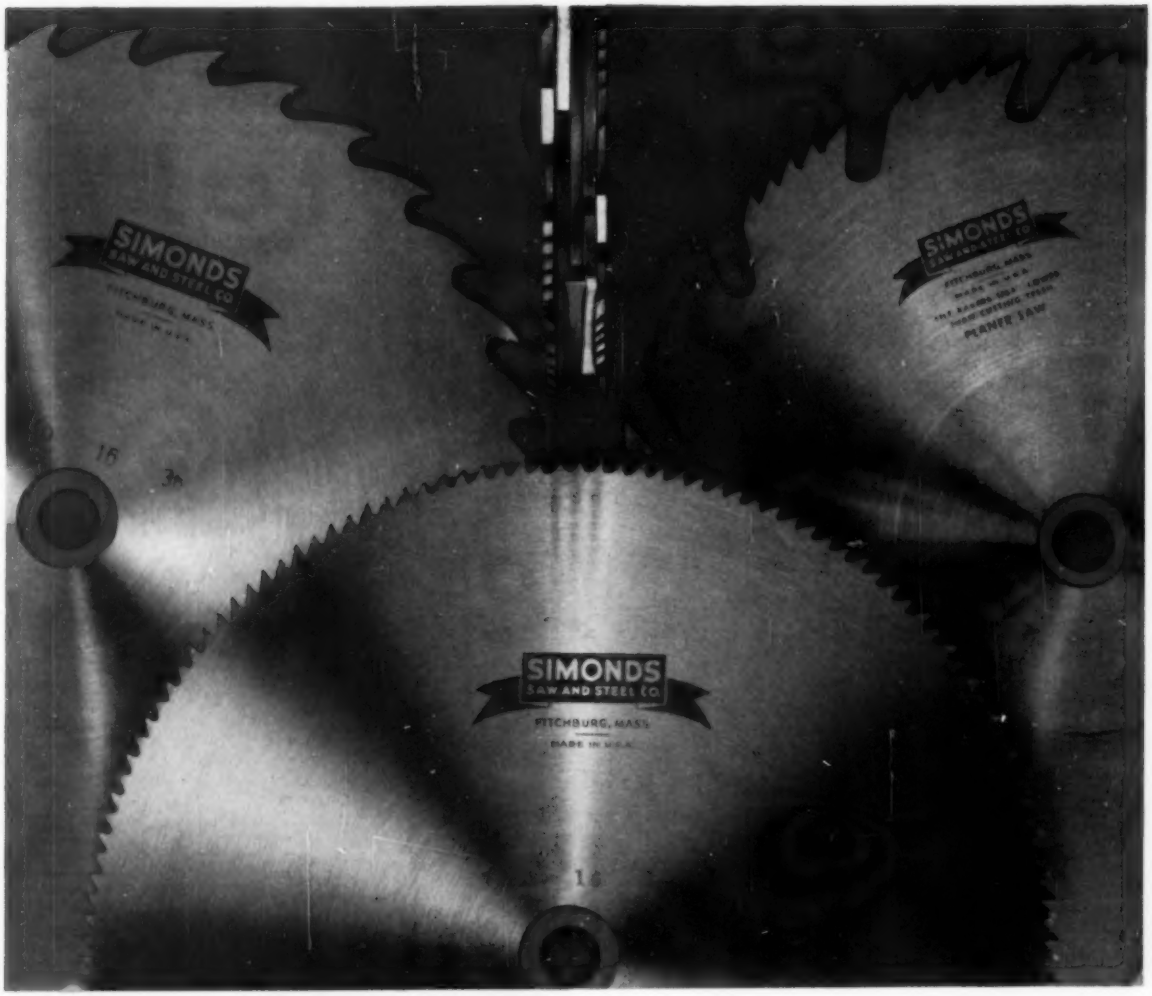
(Editor's Note.—To fill requests such as these, we have reprinted the four Stanford Report articles in 12-page folder form, and Mr. Noltemeyer's "How to Get Top Yield" article in a 4-page folder. They are available, single copies without charge, large quantities at nominal fee, as long as supply lasts.)

Wood Treating Chemicals

Editor: We noted in your December "Letters to the Editor" a request for information on wood treating chemicals directed to you by J.A.G., Conn.

Since we have been in the manufacture of water-repellent preservatives since 1921 and our laboratory has done basic research work on development of clean, paintable-type treatments for wood, we will be more than happy

16" saw rips 3½" stock at 45° angle!
FAY & EGAN
NO. 511-B
UNIVERSAL TILTING ARBOR SAW
...for accurate
Mitering
Trimming
Dadoing
Gaining
and allied operation
ONLY $1145.00
FOB FACTORY, CINCINNATI, OHIO
RUGGED CONSTRUCTION
FABRICATED STEEL FRAME
VIBRATION-FREE OPERATION
BUILT-IN DUST CHUTE
HEAVY DUTY 5 HP DIRECT MOUNTED MOTOR
CUTS OFF stock 1" thick, 18" wide
RIPS 24" wide to right, 18" to left
RIPS AT 45° ANGLE: full 3½" thick with 16" saw—5" thick with 18" saw
DADO HEADS to 2" wide used on standard arbor
Write today for bulletin showing complete specifications
FAY & EGAN CO.
2026 Eastern Avenue
CINCINNATI 2, OHIO



When Simonds puts an edge on

it Lasts!

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SAW AND STEEL CO.
FITCHBURG, MASS.

Here's the reason Simonds Circular "Red Center" Saws stay sharp . . . keep in perfect balance longer. Simonds makes its own special extra-tough steel . . . uses its own special methods of grinding, tensioning and fitting. But most important, Simonds special method of heat treating keeps saw plates flat so they stay flat, hold tension longer and run true throughout their longer cutting life.

The result is a saw that cuts smooth, fast and straight . . . stands up to fast feeds . . . holds its cutting-edge *longer* in the hardest woods. All types and sizes for every sawing need.

"Red Center" Circular Saws

Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon
Canadian Factory in Montreal, Que., Simonds Divisions: Simonds Steel Mill, Lockport, N. Y.
Heller Tool Co., Newcomerstown, Ohio
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"Easy does it...with Jones & Orth Heads!"

"SOME people seem to have to do everything the HARD way. But not ME, brother! I found out on my previous job how sweet and grief-free JONES & ORTH Cutter Heads are, so as soon as I got a chance, I changed over, here. Now I can relax, and everybody else is happy, too!"

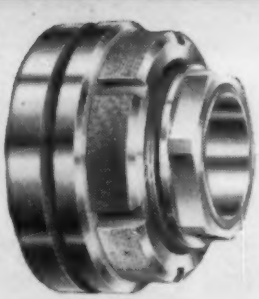
Don't get ulcers when the pressure's on for a *boost* in production, or a *slash* in costs! JONES & ORTH Cutter Heads are just what the doctor ordered for a situation like that. You get the consistent *quality output too*, that cuts rejects and keeps fussy customers happy!

There's no secret about why our cutter heads are a better buy on *any* score: It's simply that we've been doing *nothing but* making fine cutter heads for over thirty years! Naturally, *YOU* get the benefit!

Action starts fast as soon as we get your inquiry or order. With our *very* large stocks, we can give you "same day shipment" on many orders. *Write us TODAY . . . and relax!*

Write today for the name of our dealer nearest you! Address either our Seattle or Memphis branch.

Self-Centered Saw Hubs



All types of Saw Hubs and special Center Discs can be furnished from your specifications. Many standard sizes in stock.

JONES & ORTH

CUTTER HEAD COMPANY

385 SOUTH MAIN STREET
MEMPHIS 3, TENN.

BOX 3064
SEATTLE 14, WASH.

Catalog? You bet! Let us send you your copy! How else can we serve?

to offer any data that we may have if the interested party would care to write us, outlining in detail the information he needs and the use to which it will be put.

—H. C. Kennedy, Sales Mgr.
Protection Products Mfg. Co.
Kalamazoo, Mich.

Plastic Clips for Veneer Logs

Editor: In your August issue, we read an article which describes the use of plastic clips for insertion into the ends of logs to prevent splitting as much as possible during veneer cutting. We would appreciate the name of the manufacturer, as we are very much interested in this type clip.

—G. R. Twyman
Mississippi Products, Inc.
Jackson, Miss.

Pallets for East

Editor: A group of us are very interested in manufacturing pallets, but are short on market information. We prefer the eastern area where we have the most favorable freight rates. Can you help us locate a good market?

—E. S. Jefferies, Pres.
Jeffries & Smith, Inc.
Washington, N. C.

Thank You, Mr. Armstrong!

Editor: On my return from attending the NLMA meeting in Washington, I found your good publication on my desk. I want to thank you for the splendid, factual writeup you gave me in your November issue (see "WOOD Salutes") and want you to know that I heard a good many fine comments on your magazine while in Washington.

—U. R. Armstrong, Vice-Pres.
Hallack & Howard Lbr. Co.
Winchester, Idaho

Side-Loading Lift Truck

Editor: In your December 1955 article, "New Kilns, Handling Equipment Aid Fire-Damaged Mill's Recovery," a side-loading lift truck is illustrated. Would you be so kind as to forward the address of the manufacturer?

—Dimension Mill Equip. Co.
Deansboro, N. Y.

Edge-Grain Laminated Flooring

Editor: I wonder if you can furnish us with any information as to manufacturing sources or companies which might be interested in making edge-grain laminated flooring suitable in industrial plants.

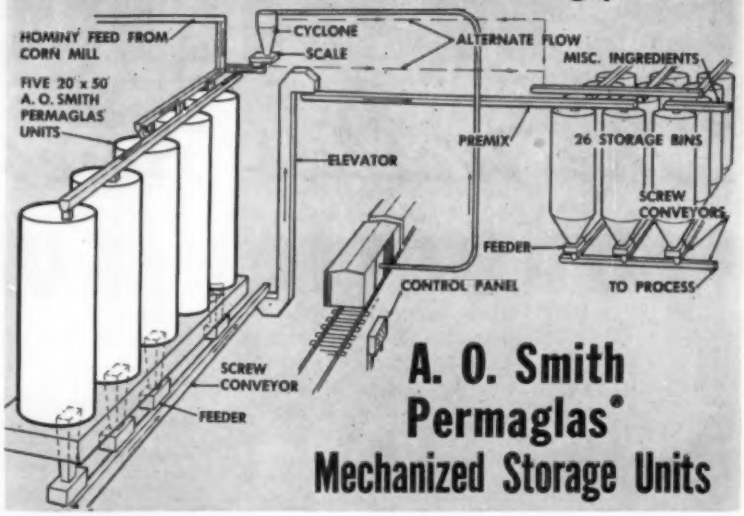
—W. G. K.

Ice Cream Stick Machine

Editor: Your name was given to us as a possible source for information on machinery to manufacture ice cream sticks. Could you furnish us with names of concerns who supply this item, and send us complete specifications and prices?

—Hnos. Medellin Ocadiz, S. A.
Mexico City, Mexico.

NEW solution to materials handling problems



A. O. Smith Permaglas® Mechanized Storage Units

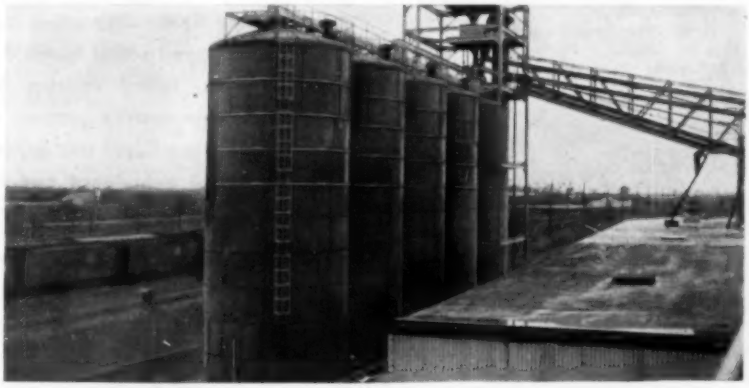
Here's the most efficient way to handle free-flowing materials at lower cost.

Glass-protected steel inside and out — five *Permaglas* Storage Units with mechanical bottom unloading are shown in the flow diagram above. They serve in a modern materials handling system used in the manufacture of Gaines Homogenized Dog Food — a product of General Foods Corp., Kankakee, Illinois.

Incoming raw materials are moved by vacuum from railroad cars to these units. Then A. O. Smith's exclusive mechanical sweep-arm bottom unloaders take over . . . remove materials — on a first-in, first-out basis — as they are needed for mixing. Handling and storage of individual bags or containers are eliminated. Accurate proportioning of ingredients assures consistent product quality.

Mail coupon for more information about A. O. Smith's *Permaglas* Mechanized Storage Units for more efficient bulk materials storage and handling.

New 6-page bulletin covers complete specifications of Permaglas Storage Units with mechanized bottom unloader.



Through research ...*a better way*

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A. O. SMITH CORPORATION
Harvestore Division • Kankakee, Illinois

Please send me complete facts about *Permaglas* Mechanized Storage Units.

Name .....

Address .....

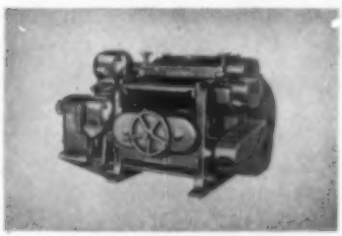
City ..... State .....

Whitney

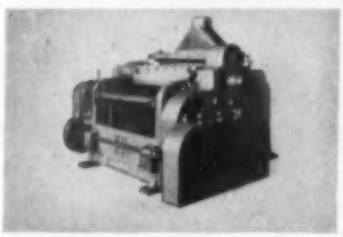
The World's Finest Built

PRODUCTION SURFACERS

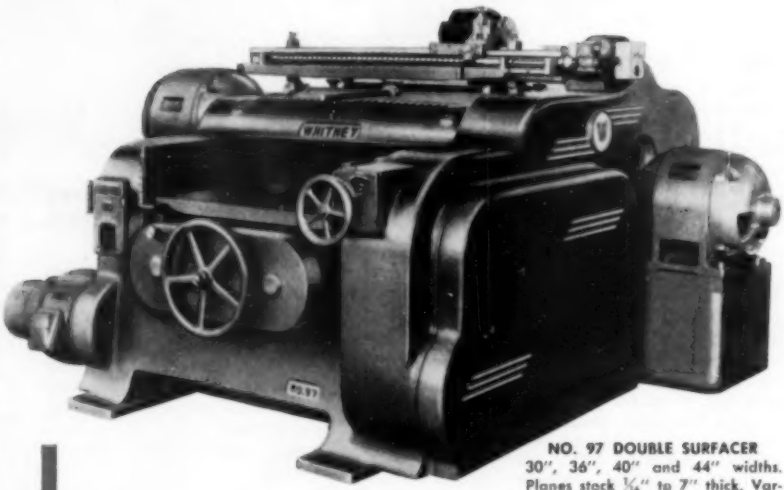
NO. 105 SINGLE SURFACER
24" width x 8". Variable Feed: 20 to 60 f.p.m. Cutterhead Motor: 7½ or 10 H.P.



NO. 32A SINGLE SURFACER
24" & 30" widths x 7⅜". No. 29A—36", 40" & 44" widths. Variable Feed to 80 f.p.m.



NO. 37 SINGLE SURFACER
Extra Heavy Duty. Widths, 32", 40", 44" and 50". Variable Feed to 100 f.p.m.



NO. 97 DOUBLE SURFACER
30", 36", 40" and 44" widths. Planes stock 1/16" to 7" thick. Variable feed: 30 to 90 f.p.m.

The hundreds of Whitney Single and Double Surface Planers in the field today enjoy an enviable record of performance and service and attest to the fine quality of construction of Whitney planers. Today Whitney Single and Double Surfacers are the finest production planers ever built by Whitney, incorporating every time-tested and proven feature gained from more than 100 years of experience and know-how in fine planer construction.

What does this mean to you, a prospective planer purchaser? It means high quality, lowest cost planing, high production, low maintenance over the years and long, trouble-free service — the safest, soundest planer investment you can make today.

Write for bulletins. Ask for bulletin WPD3 for 97 Double Surfacer or bulletin WP53 for Single Surfacers.

In Our 118th Year

BAXTER D. WHITNEY & SON, Inc.

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PLANERS • SHAPERS • AUTOMATICS • VARIETY SAWS • BACK KNIFE LATHES

WINCHENDON, MASSACHUSETTS, U. S. A.

This Way Up, Young Man!

Young men who want to make their careers in an exciting industry with a bright, challenging future would be seriously ill-advised to ignore the wood industry. They need not regard with longing the fields of nuclear energy, electronics, plastics, or others that have been made to appear more glamorous by high-powered press-agentry. They'll find ample room for progress, promise and prosperity right here in the world of WOOD.

Visitors to the recent NLMA-Teco exhibits in Washington, exemplifying new and improved wood products which research can develop, will understand what we mean. They saw great promise of new and profitable outlets for the waste materials connected with lumber and wood product manufacture. And they did not think it was too far-fetched to imagine that one day, as has been said here before, the by-products of lumber production may exceed in value the actual lumber produced in many plants.

One example of the new wood products on the horizon is a "concrete board" manufactured by combining wood excelsior with Portland cement, thereby teaming up wood's natural insulating values and the known qualities of concrete. "Wood bricks" also could become important as both a new consumer product and an outlet for wood leftovers—the short and narrow pieces that develop in sawmill operations and small clear cuttings from lower grades of lumber.

Another development for the not too distant future is the ultrasonic testing of wood by an electronic transmitter which sends out electronic impulses that are converted into sound waves. The sound waves, in effect, X-ray the wood, pointing up imperfections whether visible or hidden. This technique could lead to automatic stress grading of lumber, revolutionizing methods currently used to estimate the strength of joists, rafters, studs, beams and other structural wood members, and reducing building costs. Ultrasonics also may find practical application in measuring the smoothness of furniture surfaces and testing plywood and laminated timber glue lines.

High on the list of industry objectives is the development of a glue for bonding wood which, because of service conditions, is always wet, as in marine uses. A glued end joint strong as wood itself is still another goal as the industry's researchers seek to develop a "welded" wood joint with maximum strength and minimum use of time and material.

A bit further off, timewise, are these and other equally exciting and challenging possibilities:

Development of a moisture-proof, fireproof, insect-proof material by coating wood with a thin layer of plastic and then exposing it to gamma radiations which would change the plastic's molecular structure and produce a case-hardened product. Use of gamma rays to measure wood's density, to sterilize wood against fungi and insects, and to speed up the curing of glue lines in plywood and laminated timbers. Use of sound waves to cut lumber, once atomic energy developments reduce power costs, resulting in elimination of sawdust.

Add to these "futures" the exciting possibilities still to be realized in the utilization of wood waste in the manufacture of saleable board products – call them particle board, chipboard, shavings board, or what you will – now the "hottest" trend in the wood field. Great progress can be expected here as processes and equipment are improved and perfected.

Witness, too, the tremendous progress being made in mechanization and conveyorization, leading ultimately toward automation, and you will feel, as we do, that the wood industry offers young men all the excitement, challenge and opportunity they could hope to find anywhere—and *more* than many other fields can offer today.

WINDOW UNITS made by Andersen Corporation form this floor to ceiling wall of windows

YARD AND WAREHOUSE

Automate, Streamline Layout to Save Labor, Boost Morale

Andersen Corp. does not hesitate to spend any amount of money for any device, machine equipment or idea that will make work easier, faster, healthier, safer, or save money

By HOYT HURST
Managing Editor

THE NAME ANDERSEN has come to stand for quality in wood windows in the United States. But the designation was not gained easily—nor is it worn lightly. Behind it stands 50 years of unyielding demand for only highest quality materials to be made up into the company's products, continuous improvements in designs as well as regular addition of new models, and an unrelenting search for easier ways to do more jobs to release valuable manpower for other work.

The individual most responsible for all these accomplishments was Hans Jacob Andersen, a young man from Denmark who came to the United States and founded a firm to manufacture windows at Hudson, Wis. A few

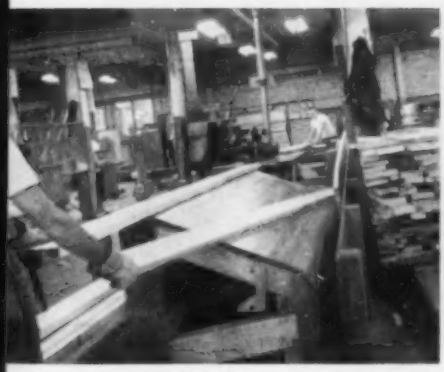
1 LUMBER is unloaded from car as it arrives, stacked on pallets and covered with asphalt laminated paper

2 STRADDLE truck moves package to outdoor storage

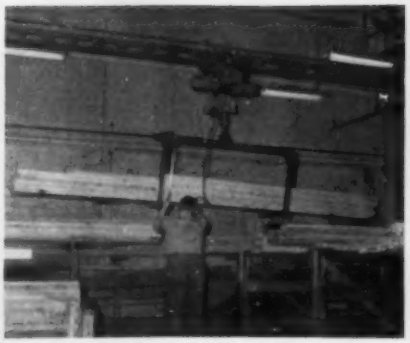
3 FORK-LIFT truck stacks lumber until needed for fabrication

4 LUMBER is stored in warehouse in unitized packages

ROUGH CUTTING



5 OFF-BEARER at ripsaw guides plank to slide that carries board down to conveyor which returns it to feeder and elevates it to table height



6 TRAM RAIL is used to move lumber from ripsaw to cutoff saw bunk

7 CUTOFF saw operator pushes cut stock onto conveyor which separates it automatically on 3 belts—first belt gets scrap, second regular 6/4 stock, third special 6/4 stock

years later the plant was moved across and up the St. Croix River a few miles to its present location, Bayport, Minn. It is related that the first English words he learned were, "Now, all together, boys."

This spirit of teamwork still pervades the Andersen Corporation. It's a friendly place where every employee is known and called by his first name.

Plant employee problems are democratically solved in committee meetings of employees. How well the system works is proved by the safety record which could well be the model and envy of every wood working plant in the U. S. today.

The Andersen management has never hesitated to spend any amount of money for any device, machine, equipment or idea that would make work easier, faster, healthier, safer, or, that would save money. Even the doors between various parts of the plant and warehouses are electrically operated to speed and ease the traffic of men and materials as they move from one section to another.

It takes 12 carloads of lumber per day to keep the Andersen plant in

Continued on Page 56

MILL ROOM

8 SURFACER and moulder set in tandem relieve moulder feeder for other work

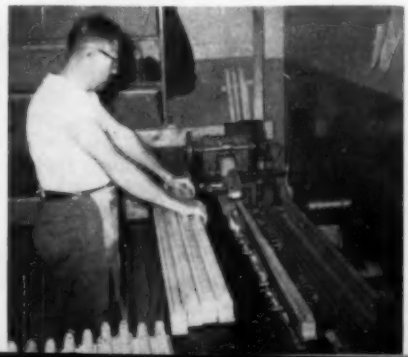
9 ELEVATOR turn-table catches stock at off-feed end of moulder—eliminates need for take-off man

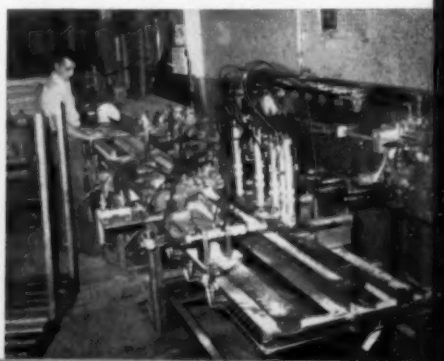
10 CHISEL and chain mortiser inserts weather strip

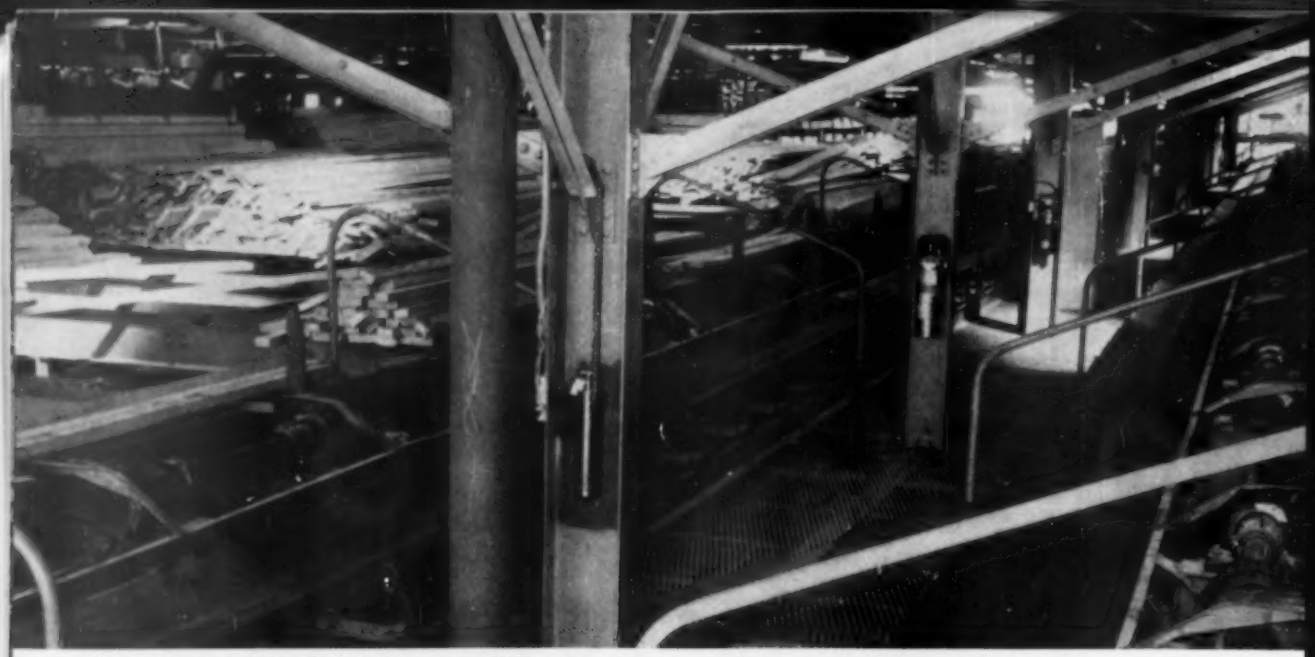
11 COMBINATION machine inserts weather strip, routs and drills

12 OPERATOR inserts weather strip, machine presses it into place, then drills 16 holes using 4 multiple drills

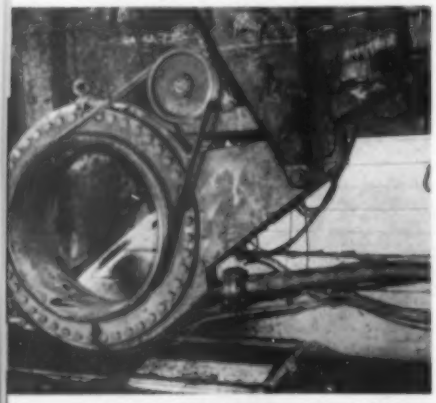
13 COMBINATION machine presses weather strip in window frame part and bores 16 holes on three sides of frame member



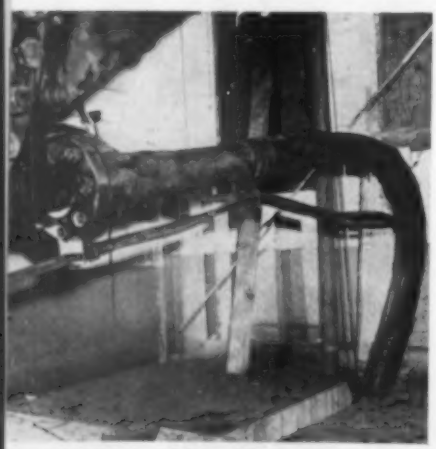




HANDLING OF LUMBER is highly mechanized and continuous. Lumber is automatically sorted by length and carried to semi-automatic kiln stacker on two rubber conveyor belts



FOUR JETS of water under 1500 p.s.i. pressure remove bark from logs in this rotary log debarker



HOSE with integral couplings connects rotary debarking ring and pump, permits moving ring out of debarker chamber for adjustment, maintenance

Conveyorized Lumber Handling Cuts Costs at New Mill

Continuous conveyor units reduce hand labor to minimum—New Kirby plant also features two 36 in. hydraulic barkers

MANUAL HANDLING of lumber has been almost completely eliminated throughout the Kirby Lumber Corporation's new plant at Silsbee, Texas, which has an estimated annual capacity of 87 million ft. Continuous conveyor units of several types reduce hand labor to a minimum.

For example, rough green lumber is sorted automatically by length in a 300 ft. building. The sorter has two sections—2 in. stock is sorted at the left and 1 in. at the right. As the green lumber is accumulated by length, width and thickness in separate bays, it is discharged to 30-in. wide conveyor belts that parallel the edge sorters and lead to the semi-automatic kiln stackers.

Logs come into the mill from the company's 550,000 acre "tree farm" holdings which are selectively harvested for perpetual yield. As much as 80% of each log is converted into salable material, and the balance is fed as fuel to boilers for steam generation, completing the cycle of 100% utilization.

Two 36 in. ring type hydraulic debarkers are used to remove the bark from all logs. The ring has four orifices through which water at high pressure (1500 p.s.i.) jets and tears off the bark. The ring is capable of movement to accommodate log contours as they pass through the ring and to permit swinging the ring out of the chamber for maintenance. Logs move through the rings at speeds up to 120 lineal f.p.m.

Water under 1500 p.s.i. at 650 g.p.m. is, therefore, brought to the ring from the pump through a special hose with integral couplings. The burst resistance is obtained by spirally wound steel cables. The ends of the cables are drawn through slots milled from steel tubing and secured by set screws. The outer end of the tubing is threaded to receive the coupling cap which forms a seal with the rubber tubing of the hose. The cap is threaded for connecting to the ring at one end and to the pump at the other.

Editor's Note: *Data and illustrations for the foregoing article were furnished by the Thermoid Co., Trenton, N. J., whose cooperation is appreciated.*

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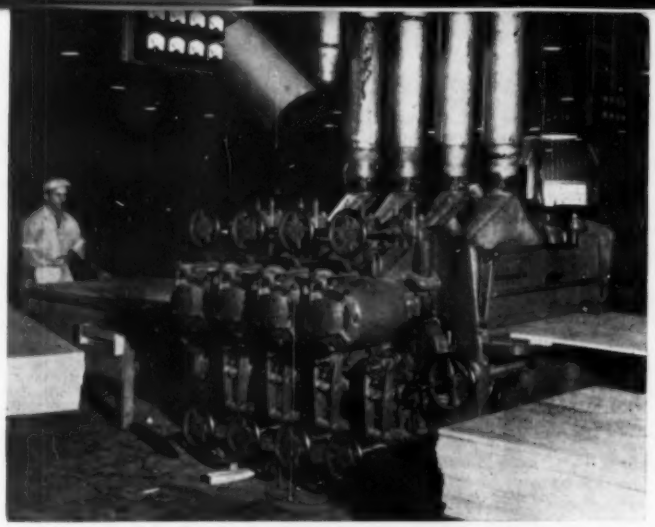


FOUR-DRUM SANDER performing first operation in producing fine furniture finish

FINISHING TABLE tops on stroke sander

Sanding Know-How Keeps Costs Down, Quality Up

How to choose correct abrasive in terms of work to be done, sanding machine, kind of wood —Practical tips on various sanding operations

By J. B. AUST*

THE FINISH PRODUCED on furniture represents approximately 50% of its total fabricating cost. An important part of this cost is for coated abrasives. By understanding the fundamentals of wood sanding and the effect of variables in coated abrasive applications, manufacturing cost can be reduced without sacrificing quality.

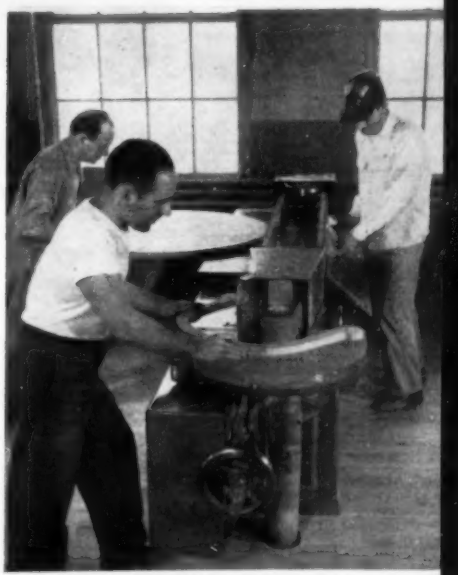
Research by abrasive manufacturers has indicated that the most effective sanding pressure is 8 lbs. per sq. in. Lower pressure gives significantly lower cutting rates, but excessive loading of the coated abrasive occurs. This loading condition is attributed to the rise in temperature at the increased pressure to a point where wood cuttings plasticize and char. Hence, excessive pressure can reduce abrasive belt life and lower quality.

The popular belief that garnet performs better than aluminum oxide at speeds of 2500 to 5000 s.f.p.m. has been proved erroneous. Both perform equally as well up to 5000 s.f.p.m. In all carefully controlled tests it has been observed that both deteriorate only by abrasion.

The useful life of coated abrasives on wood can be extended approximately 15 to 20% by dressing the worn belt surface with silicon carbide stick similar to that used for dressing grinding wheels. However, this technique requires considerable skill and caution, or abrasive life can be reduced instead of increased.

The effect of contact area on the life of coated abrasives is significant. Actually the smaller the contact area the longer the abrasive life. Applications requiring long platens tend to generate heat, glaze the surface and induce loading.

Coated abrasives perform better on one kind of wood than another. Each species varies in its physical properties and resists sanding accordingly. Moisture content in wood is important. Wood with 12% moisture content sands better than that with only 6%. However, the sanding job on wood with 12% moisture content is not as satisfactory because wood fiber is pulled out many times and left hanging. This affects subsequent sanding and final finishing adversely. Experimentation has proved that wood containing 6% moisture is best for producing a durable finish.



THREE OPERATIONS at one time on edge sander with serrated rubber belt. Edging (left) a solid oak table top, (center) curved oak chair piece, (right) bevel on oak table piece

Choice of Proper Abrasive for Each Sanding Operation. Three types of abrasives are important in woodworking:

(1) GARNET, a natural product of mines found in many parts of the world. It is used extensively for low speed wood sanding applications — 2500 to 4000 s.f.p.m.

(2) ALUMINUM OXIDE, a product of the electric furnace. Due to its toughness and sharp fracture, it is found especially adaptable for sanding wood at speeds of 5000 s.f.p.m. and higher.

(3) SILICON CARBIDE, another product of the electric furnace. The

*Coated Abrasives Div., Corborundum Co.

SIDES of desk drawers are finished with specially designed belt sander

HAND-block sanding a simple moulding

FINISH RUBBING a Winthrop desk top

hardest of the synthetic abrasives, it exhibits a tendency toward brittleness when subjected to sudden impact. Its grains are the sharpest of any abrasive known today. These characteristics make it especially suited for final finishing operations on wood.

Two steps in wood sanding are necessary to achieve the fine finish desired: (1) Sanding of "wood in the white", and (2) sanding the protective coatings applied to the smoothed wood surface.

Sanding "wood in the white" is the initial preparation of the surface for the coatings which will protect and bring out the beauty of the wood grain. Its purpose is to remove machine and/or tool marks, smooth the wood surface, and reduce the dimensions to the proper size. A poor job will accentuate every tool mark, scratch, blemish, etc., in the final finish. Therefore, the coated abrasive for this application should be chosen with care.

It's important to remember that subsequent sanding operations should be with successively finer grits regardless of the application. Short cuts may be made by skipping grits, but this will detract from the final finish.

The accompanying chart gives the general recommendations for some of the most important applications on wood.

Drum Sanding Application. The coarsest sandpaper is applied to the first and second drums on a multiple drum sanding application, followed by successively finer grits. Since the speeds of the first drums are generally 1200 to 1500 r.p.m., garnet products are preferable. The third and any additional number of drums are usually operated at 1500 to 1850 r.p.m. to obtain a superior finish. Aluminum oxide meets this requirement exceptionally well.

Maintenance of the drum sanding machine is necessary to avoid snake marks, chatter marks, and low and high sanded spots. These defects can usually be traced to worn bearings, soft or dense spots on felts, and/or a collection of foreign particles underneath the felt or abrasive cover.

Flat Belt Sanding. This process cuts off any loose fiber left by the drum sanders and smooths the wood surface for the final finishing. It is usually a two or three grit operation starting with one grit finer than the finest used on drum sanders. The automatic hydraulic stroke sanding machine is operated at speeds of 5000 s.f.p.m. or higher to obtain the desired finish. Both aluminum oxide and garnet closed coat are available, but aluminum oxide is the most efficient at speeds in excess of 5000 s.f.p.m.

Premature loading of belts is the principal fault experienced. This can usually be prevented by installing air jets directed on the face of the belt near the exhaust system. These jets keep the abrasive from loading excessively.

Edge Sanding. This, the most difficult sanding job found in a furniture factory, is done on oscillating edge belt sanders operating at speeds of 3500 to 4500 s.f.p.m. with aluminum oxide or garnet drill cloth close coat abrasive. Difficulty arises from sanding butt grain together with straight grain. Loading and burning of the abrasive belts is the principal problem. One solution is found in an edge sander that uses a 175 in. serrated contact belt behind a 226 in. abrasive belt. The present models use belts 4 to 8 in. in width. The serrations in the back-up belt flex the abrasive belt to increase cutting action and give better chip clearance. In addition, the contact or serrated belt absorbs the platen contact friction and permits the use of finer grit belts.

Drawer Sanding. This is considered a difficult job because it involves the sanding of butt grain dovetails together with the straight grain on side panels. Belts must pass over the 90° angle where the dovetail and side panel join. To add to the complications, the joints are usually sanded before the glue is completely dry. Because this part of the drawer is seldom seen, more efficient coarse grit cloth-backed abrasives may be used.

It is usually a one grit operation with 40, 50, or 60 grit close coat garnet cloth run at speeds of 3000 to 4000 s.f.p.m. The sanding of flush side drawers is not a serious problem.

Sanding Contour Shapes. Of the thousands of contour shapes used in furniture, the most important are straight-line mouldings with simple or intricate contours. They are usually sanded on a belt machine designed for the purpose. A fixture the exact opposite of the shape is made up and attached to the machine so that it bears on the back of the abrasive sanding belt. The coated abrasive belt, which is usually open-coat garnet jean cloth, is pulled out of its normal path around the pulleys.

In splicing the abrasive belt see that the ends are matched evenly at the splice. A belt with a poor splice will not run true. Tension on the belt as well as flexibility is important.

Hand-blocking is an alternate method for sanding simple mouldings. A fixture with the exact opposite shape of the moulding is made. Instead of attaching it to the machine it is held

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on the back of the cloth by the operator. The abrasive cloth is preformed–crimped to the shape–prior to sanding. Either of these methods can do a satisfactory mould sanding job.

Both aluminum oxide jeans and garnet jeans close coat and open coat are available for this application. The close coat used for simple contours flexes 90°, while the open coat used for intricate contours flexes 45°. Generally garnet is preferred because this is a low speed operation.

In the past 10 years the pneumatic drum sander, because of its versatility, has become popular for sanding contour shapes and breaking edges. It may be used with coated abrasive sleeves fitted over the drum or with an abrasive belt and backstand idler. If the shape is not too severe, the belt method is preferable because of longer abrasive life.

Contour shapes such as flutes, beads, reeds, turnings, curved chair backs, etc., are sanded on machines designed and built for the particular application. The choice of the coated abrasive depends on the application.

Cabinet Room Finishing Operation. After the proper sanding of the "wood in the white", the piece goes to the final scuffing and finishing operations. Any slight imperfections such as raised fiber, marks, scratches, etc., should be sanded off before the finish is applied. This is done with garnet cabinet paper on garnet finishing paper. Choice of grits depends on the final finish expected.

Sanding the Protective Coatings. This second step consists of bleaching and sealing, staining and sealing, or filling and sealing. These procedures are not followed by all furniture manufacturers, it depends on type of wood and final finish desired.

After bleached or blond furniture is bleached by chemicals, a seal or wash coat is applied, dried, and sanded lightly with 6/0, 7/0 or 8/0 garnet finishing paper.

Stain application is done with water soluble, spirit soluble or oil soluble dyes especially developed for use on wood to bring out or accentuate the grain. Seal coats are applied, dried, and then sanded lightly with 6/0, 7/0 or 8/0 garnet finished paper.

Only woods having an open structure such as oak, mahogany, walnut, etc., are filled. Inert materials mixed with a non-volatile vehicle are either sprayed or rubbed on the wood to fill the pores, then dried. After this a seal coat is applied, dried, and sanded lightly with 6/0, 7/0 or 8/0 garnet finishing paper.

There is a variety of sealers or wash coat materials applied in each of the

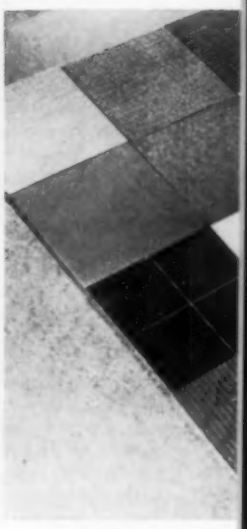
Continued on Page 38

A GUIDE FOR SANDING "WOOD IN THE WHITE" AND WOOD FINISHING

Operation	Type of Abrasive	Grit Range	Form	Availability	Comments
Belt Sanding Mouldings	Garnet	60 - 150 1½ 4/0	Moulding cloth jeans	Rolls, belts, discs and sleeves	Extreme flexibility of cloth allows it to follow contour of mould and other shapes easily —used at low speeds
Belt Sanding Mouldings	Aluminum Oxide	60 - 150 1½ 4/0	Moulding cloth jeans	Rolls, belts, discs and sleeves	Same, used at high speeds
Belt Sanding Contours	Garnet	60 - 150 1½ 4/0	Belt cloth jeans	Rolls, belts, discs and sleeves	Used on pneumatic drums in sleeve or belt form on simple moulds — speeds: 2500-3500 s.f.p.m.
Belt Sanding Contours	Aluminum Oxide	60 - 150 1½ 4/0	Belt cloth jeans	Rolls, belts, discs and sleeves	Same on high speed machines exceeding 4000 s.f.p.m.
Belt Sanding Contours	Garnet	24 - 120 3 3/0	Belt cloth drills	Rolls, belts, discs, sleeves and shredded cloth	Used on rough work, turnings, etc., at speeds of 2500-3500 s.f.p.m.
Belt Sanding Contours	Aluminum Oxide	24 - 120 3 3/0	Belt cloth drills	Rolls, belts, discs, sleeves and shredded cloth	Used on rough work at speeds of 4000 s.f.p.m. and higher
Belt Edge Sanding	Garnet	24 - 120 3 3/0	Belt cloth drills	Rolls and belts	Used at speeds of 2400-4000 s.f.p.m.
Belt Edge Sanding	Aluminum Oxide	24 - 120 3 3/0	Belt cloth drills	Rolls and belts	Used at speeds exceeding 4000 s.f.p.m.
Belt Edge Sanding	Aluminum Oxide	24 - 120 3 3/0	Resin cloth drills	Rolls and belts	Used at speeds exceeding 4000 s.f.p.m.
Drum Sanding	Garnet	20 - 220 3½ 6/0	Drum Paper	Rolls Standard Widths 24" - 48"	Used on both multiple moving bed sanders and open throat sanders where speeds are 1200 to 1500 s.f.p.m.
Drum Sanding	Aluminum Oxide	20 - 180 3½ 5/0	Drum Paper	Rolls Standard Widths 24" - 48"	Used for high speed drums above 1500 s.f.p.m.
Drum Sanding	Aluminum Oxide	20 - 80 3½ 1/0	Drum Combination	Rolls 24"	Utilized for heavy stock removal jobs at high speeds
Drum Sanding	Garnet	20 - 80 3½ 1/0	Drum Combination	Rolls 24"	Same but for low speed drum sanders
Drum Sanding	Garnet	20 - 80 3½ 1/0	Resin Fiber	Rolls 24"	Generally used for sash and door work to smooth and reduce to required dimensions
Belt Sanding Flat Work	Aluminum Oxide	20 - 400 3½	Belt Paper	Standard Rolls or Belts	Belts used on machines at speeds of 3000 to 5000 s.f.p.m.
Belt Sanding Flat Work	Garnet	20 - 180 3½	Belt Paper	Standard Rolls or Belts	Used on belt machines exceeding 5000 s.f.p.m.
Belt Drawer Sanding	Garnet	24 - 120 3 3/0	Belt cloth drills	Rolls, belts	Used for sanding butt grain dovetails as well as straight grain side panels. Glued parts usually sanded wet at 3000-4000 s.f.p.m.
Cabinet Room Sanding	Garnet	20 - 150 3½ 4/0	Cabinet paper	Standard size cut sheets	Used by hand for touch-up work, spot sanding, patching, etc.
Cabinet Room Sanding	Aluminum Oxide	24 - 150 3 4/0	Cabinet paper	Standard size cut sheets	Generally used on vibrating machines for flat work.
Undercoat or Sealer Sanding	Garnet	80 - 280 1/0 8/0	Finishing paper	Standard size cut sheets	Sanding undercoats and sealers that have a tendency to fill abrasive paper
Undercoat or Sealer Sanding	Aluminum Oxide	80 - 320 1/0 9/0	Finishing paper	Standard size cut sheets	Same as above, but generally used on vibrating machines
Undercoat or Sealer Sanding	Silicon Carbide	120 - 400 3/0 10/0	Finishing paper	Standard size cut sheets	Same as above, but generally used on vibrating machines

MARSHALL PLAN aid has helped Austrians turn wood waste into hardboard panels

CHIPPER reduces wood to size of postage stamps in first process on the way to finished panels

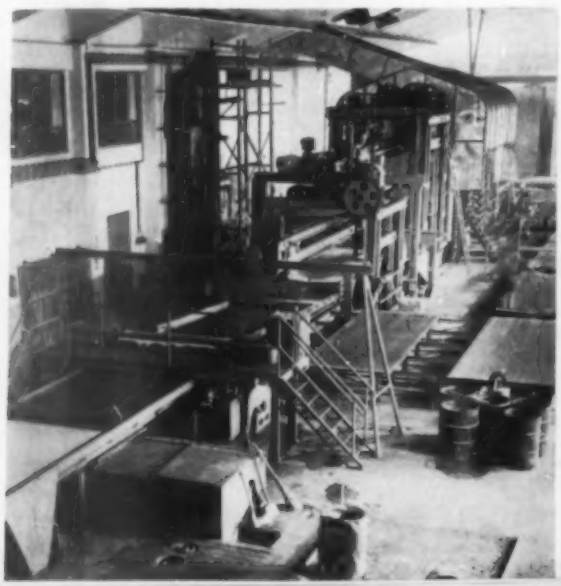


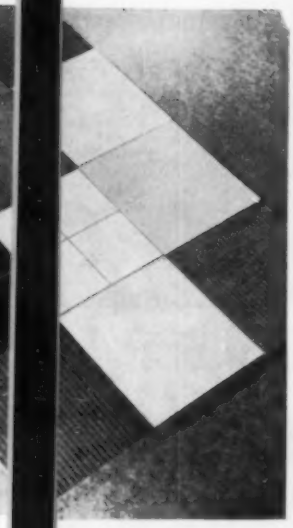
PANELS come in ishes, textures and

IN DEFIBRATOR tank, under heat and pressure, wood chips are pulped

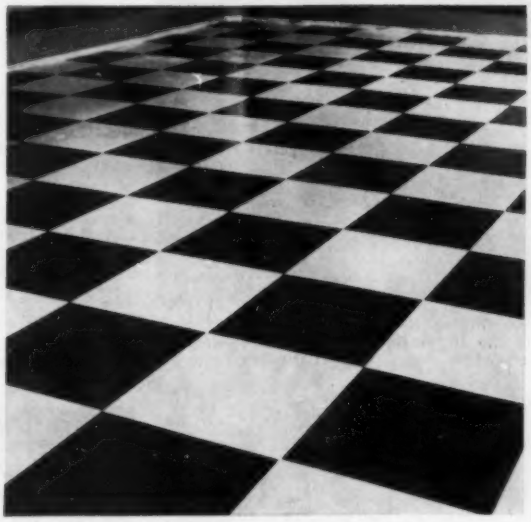
ARTIFICIAL RESIN and other chemicals are mixed with pulp, then rollers squeeze out excess water content

(LEFT) PULP is loaded on cauls in this machine, then transported, together with the caul to (right) the 20-opening hot press. After curing, panels are taken to another department where they are hardened by polymerization of resin under high temperatures

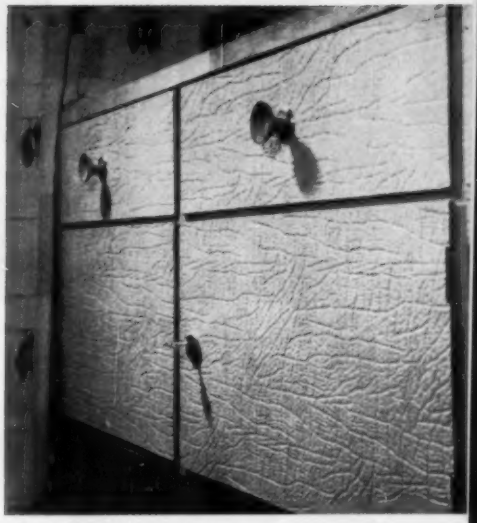




many different fin- colors



AS FLOOR COVERING, panels are in great demand because color doesn't wear off



LEATHER-IMITATION panels are used in modern furniture

U. S. Fosters Austrian Wood Waste Utilization

Panels produced smooth, in patterns, and in colors prove popular for interior decorating, for floors, for use in furniture

EVERY TENTH panel is severely tested in three stages. Here lye and acids are placed on samples. There must be no mechanical change, discoloration, or chemical reaction

AMERICAN AID has brought new ideas to Austria as well as machinery and money. Not the least of these is a wood scrap utilization program installed at the Funder Co., at St. Veit in Carinthia province.

Wood is an important part of the Austrian economy. In importance as a natural resource it is second only to iron. The average annual yield amounts to 7,320,000,000 bd. ft., but only 3% is exported as finished goods. The vast majority of the output is exported as lumber.

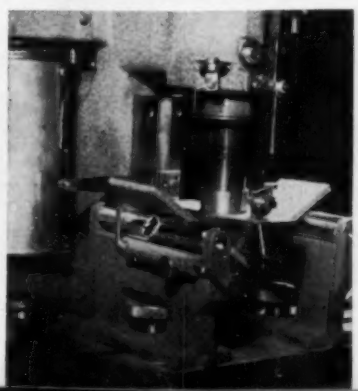
The Funder utilization program has a two-fold purpose: (1) to increase employment in the wood industry, and (2) to make use of the wood scraps from sawmills and woodworking shops.

Nowadays, wood scraps are collected at the Funder plant where they are turned into pulp, certain chemicals added, then laid up in sheets and cured in a 20-opening hot press. For the most part natural-colored, smooth-surface panels are produced. But recently panels in various designs and in various colors also have been produced.

The panels have proved popular in Austria for use in interior decorating, for floors, and for use in furniture. They are being widely used in snack bars. Furniture manufacturers are using the smooth panels for backs and tops of wardrobes, and decorative panels for any parts that show. They also have become an important export item.

SECOND test measures pressure resistance

CLEAVAGE fracture check determines elasticity and breaking point



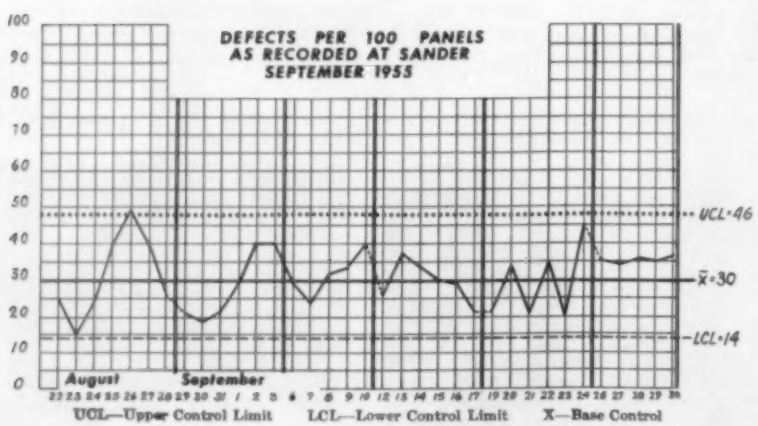
TOUGHNESS is demonstrated by burning cigarette

EVERY WORKER from the man on the bench through the foreman practices quality control in some form. As stock passes through a wood specialties plant (left) the Dryer Foreman makes a check on moisture content with a moisture meter, (center) Dry Chop operator makes hourly width check, (right) Quality Control Supervisor tests glue solids content...

. . . (left) Lath Operator makes an hourly thickness check, (center) Sander Offbearer inspects panel, marks defects, tallies defects on pushbutton recorder on wall at right, and (right) Inspector examines and grades finished panel

QUALITY CONTROL . . . Is It for Giants Alone?

How a small company—up to 175 employees—can install an economical, effective quality control program at minimum cost using regular workmen



UCL—Upper Control Limit LCL—Lower Control Limit X—Base Control

By W. H. GUTTENTAG

A STATISTICAL QUALITY CONTROL program properly installed and organized will save many times its cost in reduced rejects, increased yields, upgrading, and customer good will.

Many firms believe statistical quality control is so complex that it is beyond the scope of individuals untrained in mathematics or statistics, that only large firms can support the staff required to install and maintain the program.

On the contrary, a small company can benefit from a quality control program at a minimum expense, with a small staff, utilizing regular employees. But how should a small factory – anything up to, say, 175 employees – go about organizing and installing a plan which is economical, effective and applicable?

First, consider who will initiate the program and be in over-all charge of its installation. Logically, this should be the production manager or the factory manager. It is to him that the quality control supervisor should report. He must believe that statistical quality control will benefit the operation and have an understanding of statistical quality control to some ex-

Continued on Page 66

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Bolter salvages small logs, edgings and slabs
—Permits greater recovery of lumber from tree
—Makes crooked logs straight by cutting at bend

BOLTER salvages small logs, slabs and edgings that are unprofitable to work by other methods. Screen protects workman from flying chips

FENCE provides accurate control over width and thickness of stock

ALTHOUGH THE DEMAND for quality dimension stock grows every day, it becomes less and less available in long, wide boards. But Wonderland Mfg. Co., Ferdinand, Ind., using a short-log bolter, is producing high quality dimension stock nowadays out of low-quality logs and small bolts.

"As much as 75% of what most manufacturers use today is in short, narrow pieces anyway," says A. L. Souders, plant manager. "They use short random widths and glue them up into panels. As a subsidiary of Huntingburg Furniture Co., we supply square and dimension stock to the eight other plants of our company that make furniture. We saw mostly 5/4 lumber--oak and some poplar. This is natural country for oak, you know. Most of our output is used for drawer sides and backs."

The bolter was acquired about two years ago when Huntingburg Furniture Co. purchased a complete sawmill a few miles away and moved it to Ferdinand. The bolter does not replace the sawmill. Rather, it takes up where the sawmill leaves off by salvaging small logs, slabs and edgings that are unprofitable to work by other methods.

As loads of logs are brought into the yard, those smaller than 17 in. in

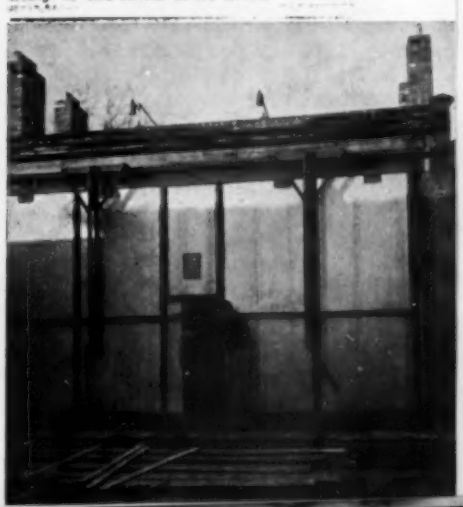
Continued on Page 65

Short-Log Bolter Studied in South

THE SOUTHERN FURNITURE MANUFACTURERS ASSOCIATION is sponsoring the project "Furniture Dimension Stock from Sub-Standard Logs." The studies on poplar have been completed and show: In an area where poplar cordwood supplies are sufficient, large savings can be made by cutting low grade poplar logs into furniture dimension stock with a short log bolter compared with purchasing log run or graded poplar lumber. Both core stock and clear dimension can be produced economically from material that cannot be profitably sawn into lumber on a convenient sawmill. Tests are just starting on oak and will be conducted on upland gum during the next few months. Material costs, yield, labor costs, overhead costs, and drying techniques are each being studied. A complete report will be printed and distributed to association members when the project is completed.

From a report by E. Sigurd Johnson, professor of Furniture Manufacturing and Management, North Carolina State College, to SFMA, Nov. 3-4, 1955, at White Sulphur Springs, W. Va.—THE EDITORS.

DIMENSION stock is moved immediately to the kilns to be dried



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GRAIN SEPARATION produced in Douglas fir door stock by improper machining conditions

3 Main Causes of Defects in Douglas Fir Door Stock

Separated grain and related troubles found due to machining, seasoning practices, characteristics of samples

By E. M. DAVIS
Technologist,
Forest Products Laboratory
Madison, Wis.

AN EXAMINATION OF 1,600 machined samples of Douglas fir door stock at the Forest Products Laboratory, Madison, Wis., recently showed that about 9% of them needed further machining to make them acceptable. In nearly all cases, the reason was separated grain or related troubles. The problem is not limited to Douglas fir nor to door stock. It crops up periodically in other softwoods and in other lumber items.

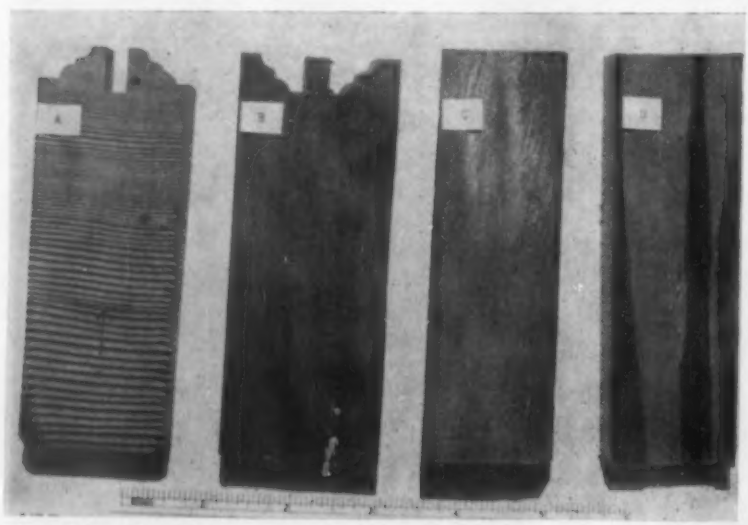
There are no clear-cut dividing lines between raised grain, loosened grain, and separated grain or shelling. They merge gradually, and the distinction is largely one of degree. Test material consisted of 124 samples of 6/4 by 5 in. by 7 ft. Douglas fir door stock from 6 different sources in Oregon, Washington, and British Columbia. Four sets of matched test material were made by cutting each long piece into 20 in. lengths, which were then ripped to give a slope along the grain of 1 in. in 20 in. This made it possible to machine against the grain. Each piece had a bark and pith edge and each was machined in four different ways: with the grain on either edge, and against the grain on either edge.

The actual machining was done on the edges or flat-grain portions of the samples, because nearly all the trouble occurs in the flat grain. Depth of cut was usually 1/16 in., and samples were large enough to permit repeated cuts under different conditions. Most machining was done on the jointer, but in most instances, check runs were made on the planer. The cutterhead of the jointer had a cutting circle of 3¼ in. and revolved at 3,450 f.p.m. The cutting angle of the knives was 40°.

After each run, each sample was examined for raised, torn, separated or

Continued on Page 38

HONEYCOMB and different types of surfaces produced by splitting



DIFFERENTIAL shrinkage in Douglas fir door stock

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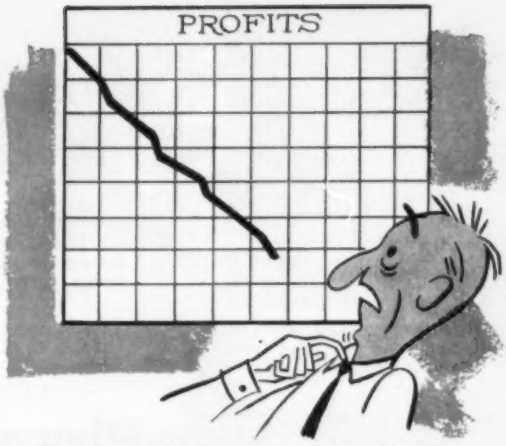
Production costs had the boss in a stew,



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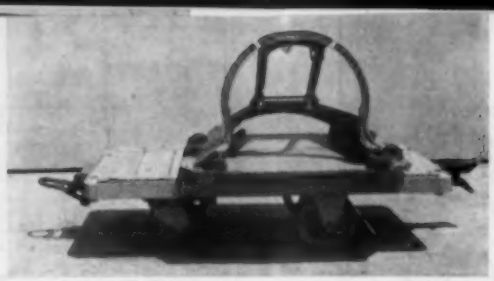
PLYWOOD tote boxes designed for each phase of operation facilitate movement of parts



TRAILER fixture and plywood transport base for items like windshield assemblies cost little, assure safe transport

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Plywood Helps Reduce Losses in Instrument Handling, Storage

How Northrop Aircraft uses 400,000 sq. ft. annually for tote boxes, in-plant carts, lockers and cabinets —Cuts damage to six items in 12,000 handled monthly

DAMAGE RESULTING from careless handling and improper storage of delicate instruments, electronic devices and close-tolerance parts used in manufacture of Snark missiles and F-89 Scorpion aircraft at Northrop Aircraft, Inc., has been cut down to six items out of 12,000 handled per month.

This outstanding record is the result of a highly efficient materials handling and control system recently evolved by the Hawthorne, Calif., aircraft firm.

The program, which has brought a sharp reduction in production costs by decreasing losses from damaged parts, is based on intensive employee training, new packaging and container materials, and a wide range of low-cost fir plywood materials handling and storage fixtures. The latter include plywood tote boxes tailored to various uses, inexpensively built in-plant plywood transportation carts, and well designed lockers and cabinets for temporary storage.

A basic objective of the program is to make sure that no employees with bull-in-the-china-shop inclinations will get opportunities to demonstrate their dubious talents in handling costly and easily damaged components.

Each new man engaged in internal transportation is closely supervised by an experienced employee during his first two weeks on the job. Not only must he learn routes and prove himself capable of operating equipment properly, but also he must study safety literature and a procedure manual in his spare time to prepare for a rigid written test he must pass in order to remain in the department.

Even after he is an accepted member of the manufacturing control team, the employee must take periodic refresher courses and training to learn how to operate new equipment with maximum efficiency.

New materials handling equipment has enabled manufacturing control workers to rely more on their brains than their muscles to handle various assignments. However, since neither equipment nor training will eliminate all accidents due to normal human mistakes, Northrop officials attained an added margin of safety by providing workers with special fixtures, protective containers, and storage facilities which minimize the possibility of damage when something goes wrong.

Plywood is the material most commonly utilized by Northrop to make damage preventers. Northrop uses about 400,000 sq. ft. of fir plywood annually. But the dollars spent for handling fixtures is little enough compared to the risk of losing an instrument worth thousands of dollars. At the same time, many flywood fixtures are more economical because of the ease with which they can be fabricated with panel material.

For example, it is estimated that a collection of tote boxes the company recently made out of plywood for $9,600 would have cost about $20,000 if constructed from steel.

The general advantages of plywood in structures of this type according to Northrop officials are:

(1) It doesn't corrode and won't cause corrosion in metal parts. (2) It damps intense sound waves of mechanical vibrations which are common in most factories, and thus protects delicate instruments. (3) It resists impacts or blows in such a manner that it won't become dented or relay destructive forces as would steel metals. (4) It has soft, smooth surfaces which will not readily produce scratches on most other materials. (5) Its density is such that it contributes relatively little to the weight of loads that must be handled. (6) It is a thermal insulator which can help maintain uniform temperatures if necessary. (7) Its appearance earns respect.

That latter item may seem trivial, but it has been demonstrated time and again that people most frequently damage those things whose looks they just don't like!

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THE DRY KILN CORNER

Be sure to pass this issue along to your dry kiln operator and mark this page—devoted to readers' problems in kiln drying and related seasoning questions—for his special attention. If you—or your dry kiln operator—have a problem in any phase of this complex subject, send it to WOOD & WOOD PRODUCTS, 139 N. Clark St., Chicago 2, Ill. Our experts will help you!—*The Editors.*

Air Drying

Question: Will lumber which has been kiln stacked but left on the truck for air drying thirty to sixty days have the same moisture content in the middle of the stack as it does on the edges? We have recently had some trouble with lumber which has been treated in this manner.

Answer: We have to presume that you have stacks eight or six feet in width, hand piled. If so, the lumber on the edges of these stacks will have dried much more than that in the center, and as the sample boards are on the outside of the stacks the kiln control would be based on moisture contents lower than actually exists in the center of the stacks. The result would be that the drying was not uniform in the final moisture content and, if the lumber should be oak, above the fiber saturation point there would be a very good chance of finishing up with a bad case of honeycomb. However, if the standard procedure is to kiln stack lumber well in advance of time of kiln drying, my recommendation would be to return to the practice of building a center flue in all stacks six feet or over in width. This will allow increased air movement in the center of the stack during the air drying period with a more uniform loss of moisture across the width of the stack.

Double-Stacking Thin Boards

Question: It has been suggested to me that when I stack thin (1/2 and 5/8 in.) lumber for the kiln that I stack two boards face together between each layer of stickers. This would greatly increase the amount of lumber which I could get on each stack, but what would be the result in drying loads stacked in this manner?

Answer: This was tried at one time by a furniture factory in the middle west with very unsatisfactory results. The outer surfaces were quickly dried while there was very little change in the facing surfaces. It would increase the loading capacity to follow this procedure but would not give well-dried lumber. It is the opinion of this writer that both an increase of capacity and well-dried lumber would best be obtained through the use of thinner stickers. The minimum thickness of the stickers would depend upon the rate of circulation in the kiln and the rate of breakage of the stickers.

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. . . there's more than one way of doing it. For instance, there are *guaranteed,* automatic Armstrong Steam Humidifiers that operate for pennies a day. Keep RH within 2% to 4% of desired level. Wood in processing and storage rooms will maintain desired EMC. No splitting, warping, checking or glue joint failures. No dripping or wet spots to harm finishes. Not too much moisture here and too little there. Get the NEW 8-PAGE BULLETIN 505—an eye-opening discussion of humidification that may save you thousands of dollars in stock losses. It's interesting, educational, factual—free on request. Write:

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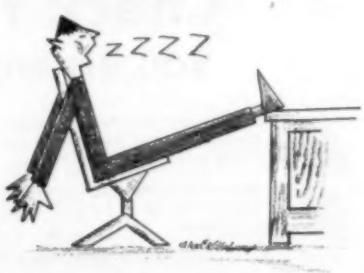

ANGLEDOZER

A standard crawler tractor with a heavy steel blade mounted across its front. The blade can be raised or lowered by hydraulic or cable devices, and each end can be advanced or retracted to place the blade at various angles—thus making it possible to push earth to either side. (Syn.-Trailbuilder)

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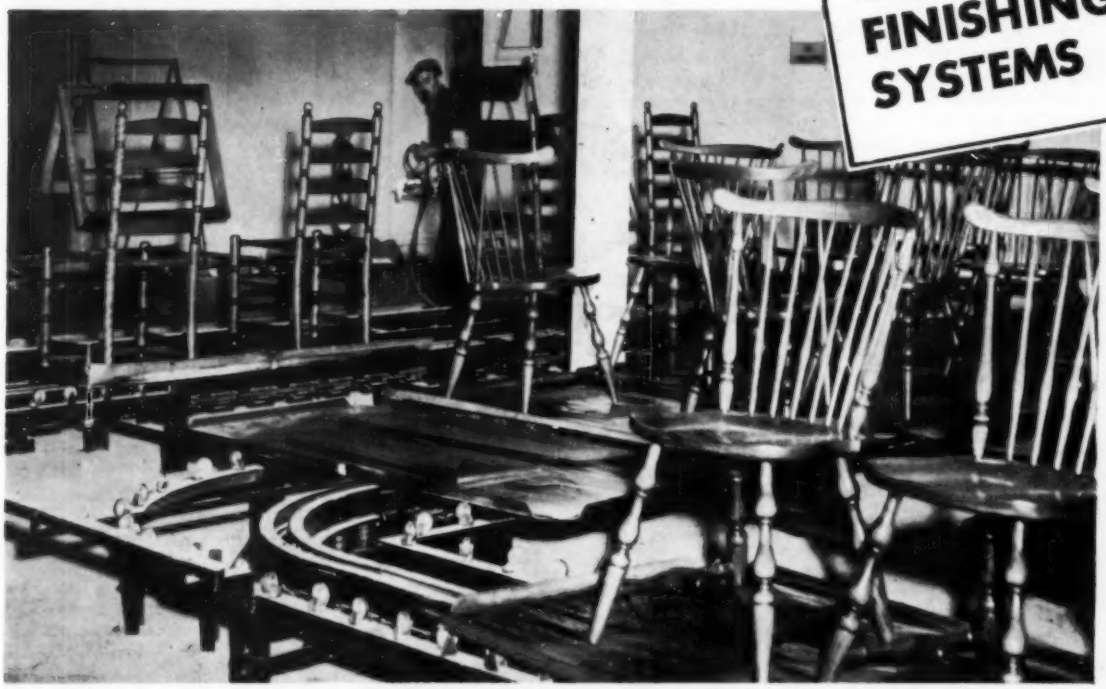

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- SYSTEM ADAPTABLE TO LARGE OR SMALL PLANTS
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- SYSTEM INSURES EXACT PRODUCTION AND QUALITY CONTROL

WRITE FOR BULLETIN W2-L15

GEORGE KOCH SONS, INC.
EVANSVILLE, INDIANA

DOUGLAS FIR DEFECTS

Continued from Page 32

fuzzy grain. When any of these defects were present, the degree was recorded on a scale of 5.

The general conclusion reached was that defects were not caused by one, but rather by several contributing causes. Chief among them are machining practices, seasoning practices, and inherent characteristics of individual samples. The first two can be controlled to some degree. The specific conclusions are as follows:

Machining. Separated grain can be produced almost to order by using dull knives under certain conditions. The pressure that results from the impact of dull knives does not necessarily reduce the quality of work much, provided the knives are sharp. Although sharpness of knives has long been recognized as a factor in machining, it appears that its importance has been underestimated.

Seasoning. Honeycomb, probably the most serious of the defects investigated, can be controlled, in part at least, by the use of suitable kiln-drying schedules. The most favorable of the three schedules tested developed honeycombing in only 4% of the lumber, as compared to 16% for the least favorable. The different schedules had very little effect on the occurrence of separated grain.

Inherent Differences. Outwardly similar pieces of wood often have inherent differences that make some of the more prone than other to develop separated grain and related defects. Such trouble-prone pieces usually have a tendency to split smoothly under test. Among the possible factors that may account for this tendency are age, growth conditions, genetic strains, and microstructure. Inherent weaknesses in a grown tree cannot be corrected. If inherently weak wood can be recognized, however, it can be used where its weaknesses will be least objectionable.

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You can't beat Pattern WP-326 for good-looking door and window trim! This streamlined casing is universally being specified by the majority of builders of modern homes. To keep this casing in stock in ample quantity, you will want modern production tooling, ready at a moment's notice, and you can't do better than a Badger Clamp "T" Slot Cutterhead set up ready to go!

WP-326 finishes to 2¼" x 1⅛". It is one of the many patterns for which both cutters and heads are *AVAILABLE FROM STOCK* in either 6½" or 7" cutting circle, 4 or 6 bit, 1⅛" or 2⅛" spindle dia., and to run either face down or face up. Heads for cutting the hollow back, while not shown, are also available from stock.

Milled-to-pattern bit cutterheads give high production, faithful duplication of exact pattern from run to run, plus the simple bevel edge sharpening principle! In a nutshell, modern production tooling for a modern, popular pattern! Send your order in today and be prepared.

with delivery from Stock!

WISCONSIN KNIFE WORKS
BELOIT, WISCONSIN
Engineers to the Woodworking Industry!

SANDING KNOW-HOW

Continued from Page 25

above procedures to prevent bleeding through subsequent coatings. Common sealers used are shellac and alcohol, glue and water, lacquers containing lubricating ingredients, and clear lacquers. All have a tendency to load sandpaper. Garnet finishing paper, an extremely flexible glue-bonded product used dry, is the most economical for these applications.

A final protective finish consisting of lacquers, shellac or varnish is now usually sprayed on in one, two or three coats. After each coat is dried, it is sanded with waterproof 360, 400, 500 or 600 grit paper. Depending on the final finish, one or more of these grits is used with a lubricant to remove bubbles, orange peel, etc.

Following the last sanding operation the piece is rubbed with compounds and polished to bring out the desired type of finish.

When the proper procedures are established throughout the operation, duplication of finishes is relatively simple. Rubbing and polishing compounds are formulated for a specific purpose. It is advisable to adhere to the manufacturers directions in their use.

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See Page 76 for details

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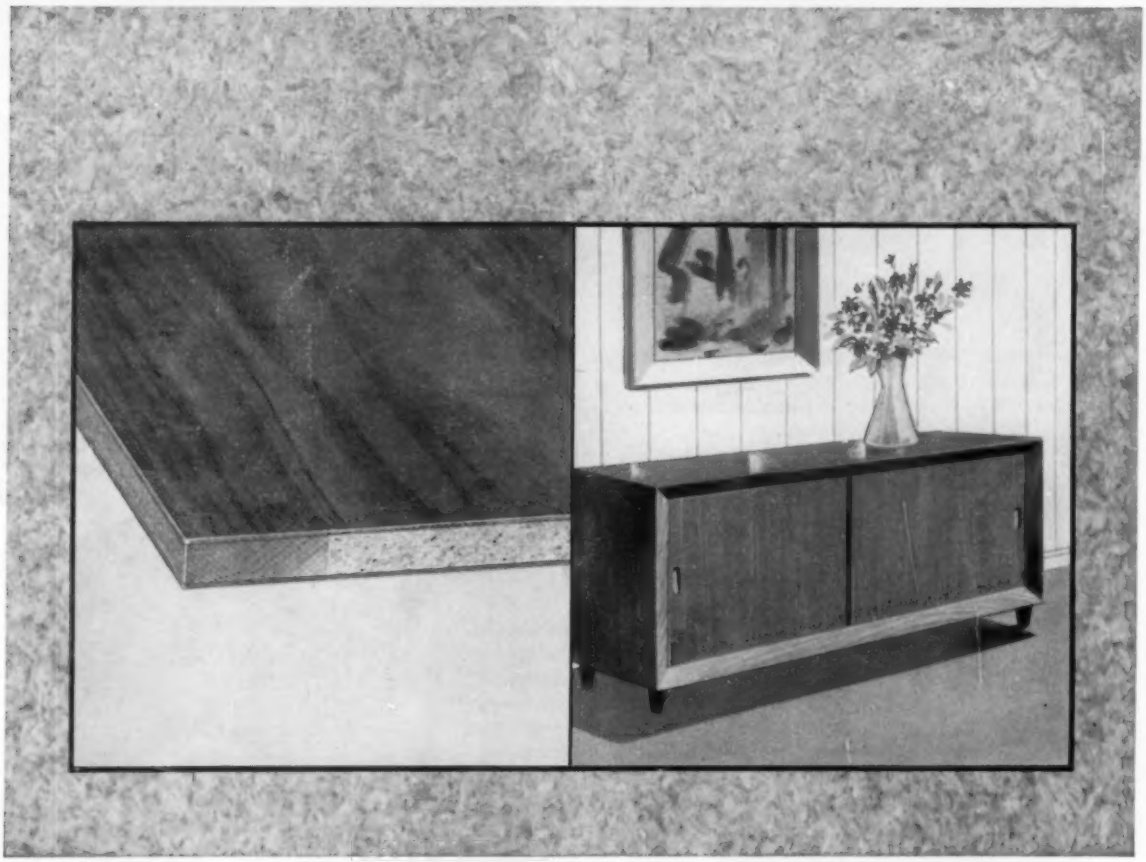

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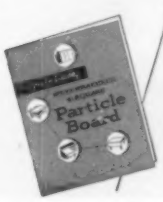

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Shows machining operations, suggests various uses. Find out how Weyerhaeuser 4-Square Particle Board can help you make *basically better products!*

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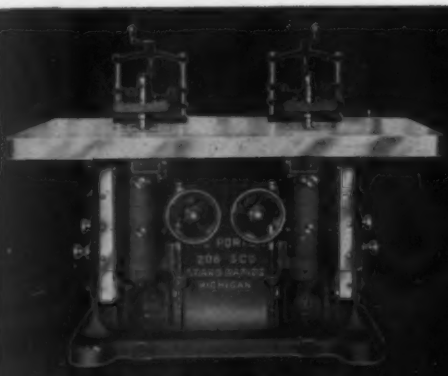

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A heavy duty shaper with heat-treated steel spindles and high-speed ball bearings. Spindle tops are self-centering and detachable. Mirror-smooth table. 8500 RPM's

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Handles 11⅛" lengths without butting end to end. Has a matched V-belt drive for rotating the cutterhead at 6,000 RPM to assure clean, smooth, perfect work.

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Performs all types of curved or serpentine shaping. Tables run on ground and shaped dovetails. Two spindles with 12,000 — 18,000 RPM.

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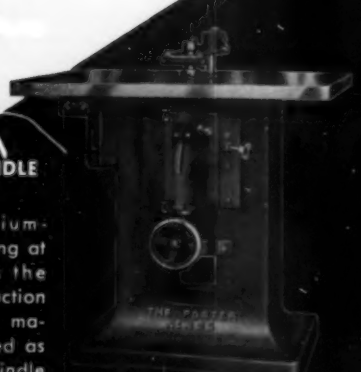

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A heavy duty single spindle router. 2 speeds — 20,000 RPM and 12,000 RPM. Vertical table travel by foot pedal. Furnished also with sliding head. Other sizes also available.

300 JOINTER
Rigidly ribbed tables with aggregate length of 8'. Dovetailed steel lips, intermediate sliding table. 12", 16", 24", 30", 36" widths.

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. . . to give you more production for every dollar you spend

Buying Porter **DIVIDEND DESIGNED** Machinery is like buying custom-built furniture at a popular price. You get so much more for your money. Your cost per job is less because Porter Machines are faster, take heavier cuts and require less adjusting. They have an extra margin of speed, capacity and strength not found in ordinary machines.

Porter's Master Mechanics have concentrated on building fewer machines better. Each machine is built by specialists with years of experience in building one particular type of equipment. They take pride in their work and produce masterpieces of mechanical skill, designed to give you a profit dividend.

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If you need a Router, Saw, Shaper, Planer, Carver, Jointer, Surfacer or Serpentine Shaper it will pay you to investigate Porter, the machinery designed to give you greater dividends.

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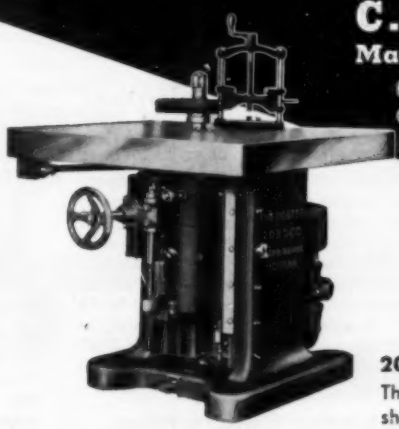
Automatically operated straight line cut-off saw saves manhours. Cuts from 0 to 45 strokes a minute.



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This heavy duty single spindle shaper handles a full range of work from light to heavy at 8500 RPM's.

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Tilting Arbor Saw

MFR.: J. A. Fay & Egan Co., Dept. WP, 2011 Eastern Ave., Cincinnati 2, O.

DESCRIPTION: Model 511-B universal tilting arbor saw.

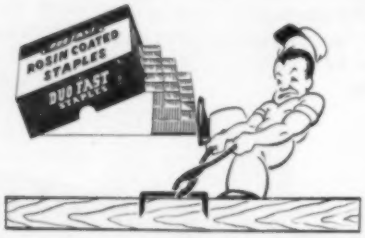
FEATURES: Table, a heavy ribbed casting, surface-ground, is mounted on long base 44 x 40 in., arbor can be angled from 0° to 45°, and unit is powered by 5 HP, 3600 r.p.m. fan-cooled motor which mounts directly on arbor. Will cut off stock 1 in. thick to 18 in. wide, and will rip 24 in. wide to right or 18 in. to left. With saw at 45° angle, it will rip 3⅛ in. thick with 16 in. saw. An 18 in. saw will cut through stock 5 in. thick. Standard arbor will accommodate dado heads up to 2 in. wide and can be arranged for heads up to 4 in. wide on order.

Low Mill Air Nigger

MFR.: Wheland Co., Dept. WP, Signal Mountain Rd., Chattanooga, Tenn.

DESCRIPTION: Low mill air nigger.

FEATURES: Air-operated and quick-acting, is especially suitable for small mills and light carriage use. Compact, it requires only 5 ft. 3 in. depth, and is easily handled and completely assembled for easy installation. Is ruggedly constructed — cylinders are of non-rusting brass, with machined steel heads, and oscillate on heavy steel trunnion; teeth are of hinged steel; pistons are chrome plated for longer wear. Top frame angles form horizontal bar guide.

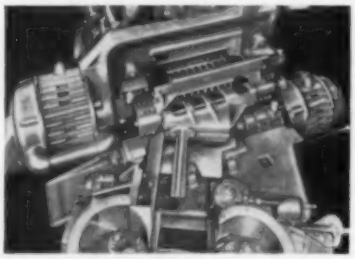


Rosin-Coated Staples

MFR.: Fastener Corp., Dept. WP, 860 Fletcher St., Chicago 14, Ill.

DESCRIPTION: "Duo-Fast" rosin-coated staples.

FEATURES: Regular staples have special points giving them good holding power, but in some jobs greater holding power is required, as in case back work. Since rosin serves as an adhesive, these staples are coated with it for double holding power.



Diagonal Planer & Matcher

MFR.: S. A. Woods Machine Co., Dept. WP, 27 Damrell St., Boston 27, Mass.

DESCRIPTION: Model A-480M diagonal planer and matcher.

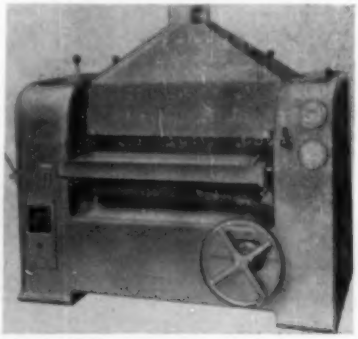
FEATURES: Diagonal cutterhead, shown here, serves to hold stock against guide fence — requiring less lead in guide — and reduces friction and wear on feed rollers. But important results are elimination of sniped ends, smoother finish on knots and cross grain, and less power consumption used in feeding stock. Full motorization achieved through six motors with capacities ranging from 20 to 75 HP. Ruggedly built, machine weighs 34,000 lbs., and is equipped with JM5 profiler. Stock is easily handled up to 600 lineal f.p.m.

Non-Loading Finishing Paper

MFR.: Armour & Co., Abrasives Div., Dept. WP, Alliance, Ohio.

DESCRIPTION: "No-Load" finishing paper for sanding soft materials, such as paints, lacquers, and enamels.

FEATURES: Backing has special rubber base to prevent slipping, a new binder adhesive has been used, but a new and different coating which repels filling is the main features of this finishing paper. Company claims tests show that "No-Load" lasts longer, cuts faster, and provides better finish than waterproof paper and at minimum savings of 26%. Is available in two types: Crystolon for automotive and appliance industries, in several grits, and Garnet for woodworking industry in form of hand sheets, discs, and cut sheets for machine sanders, in 5/0. Other grits will be added to line.

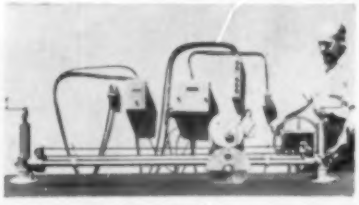


Endless Bed Sander

MFR.: Supreme Woodworking Machinery Corp., Dept. WP, 50-52 Howard St., New York 13, N. Y.

DESCRIPTION: Improved model endless bed sander.

FEATURES: Available in two-drum models 25, 40, and 50 in. wide, and three-drum models 40 and 50 in. wide. Variable feed permits machine to handle from 16 to 50 f.p.m. Has self-oscillating mechanism—drums oscillate in synchronization with their rotation. New feature is adjustable tension spring between bed and pressure plate which is self-regulating to prevent cutting through veneer panels, but which can be locked to dress a panel accurately before veneering. Motor is placed within base for greater protection.



Automatic Panel Saw

MFR.: Hendrick Mfg. Corp., Dept. WP, 11 Selman St., Marblehead, Mass.

DESCRIPTION: Fully automatic panel saw, model MA, which may also be manually operated by throwing clutch.

FEATURES: Available with capacities from 4½ to 12½ ft., with motors up to 3 HP, it provides automatic carriage speeds infinitely variable from 8 ft. to

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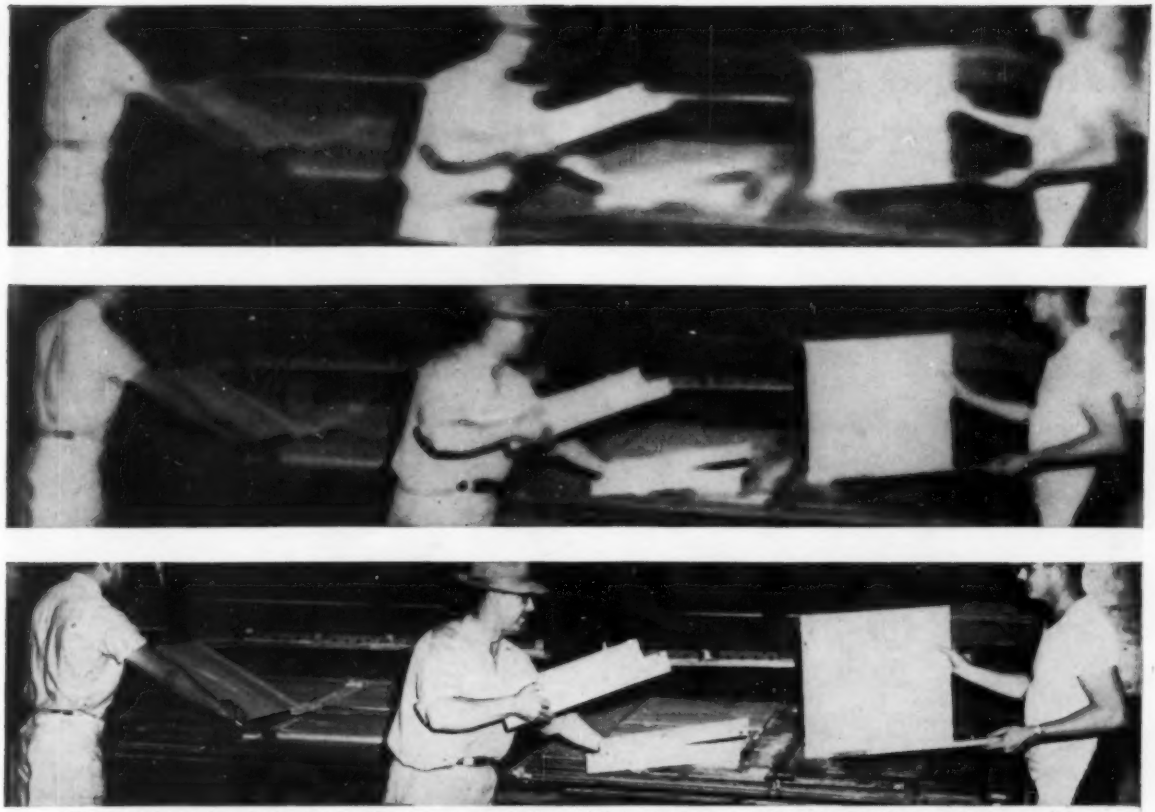

Williams Furniture Corp., Sumter, So. Carolina, uses an RCI urea-formaldehyde adhesive in a panel-to-frame high frequency gluing operation.

How RCI can focus sharply on your specific glue needs

It's easy to see why RCI is in an excellent position to fill your regular and special glue needs. To begin with, Reichhold offers a practical range of urea-formaldehyde adhesives for the furniture field . . . and phenol-formaldehyde, resorcinol, soybean and casein glues for other applications.

Viewed from the angle of quality — you can't do better. RCI glues give you the assurance of consistently high quality and dependable performance. That's because the uniformity of these adhesives is safeguarded by continued RCI quality-control — starting in many cases with the manufacture of Reichhold's own key raw materials.

Look to Reichhold, too, for fast service. RCI plants in all major sections of the U. S. can supply any firm quickly by rail tank car or highway tank wagon. And Reichhold's nationwide field service offices are ready with expert counsel.

With advantages as important as these, it's evident why Reichhold successfully serves so many furniture manufacturers year after year. If *you're* using urea-formaldehyde glues, write for Bulletins G-4 and G-6.

Creative Chemistry . . .
Your Partner in Progress

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Synthetic Resins • Chemical Colors • Industrial Adhesives • Plasticizers
Phenol • Formaldehyde • Glycerine • Phthalic Anhydride
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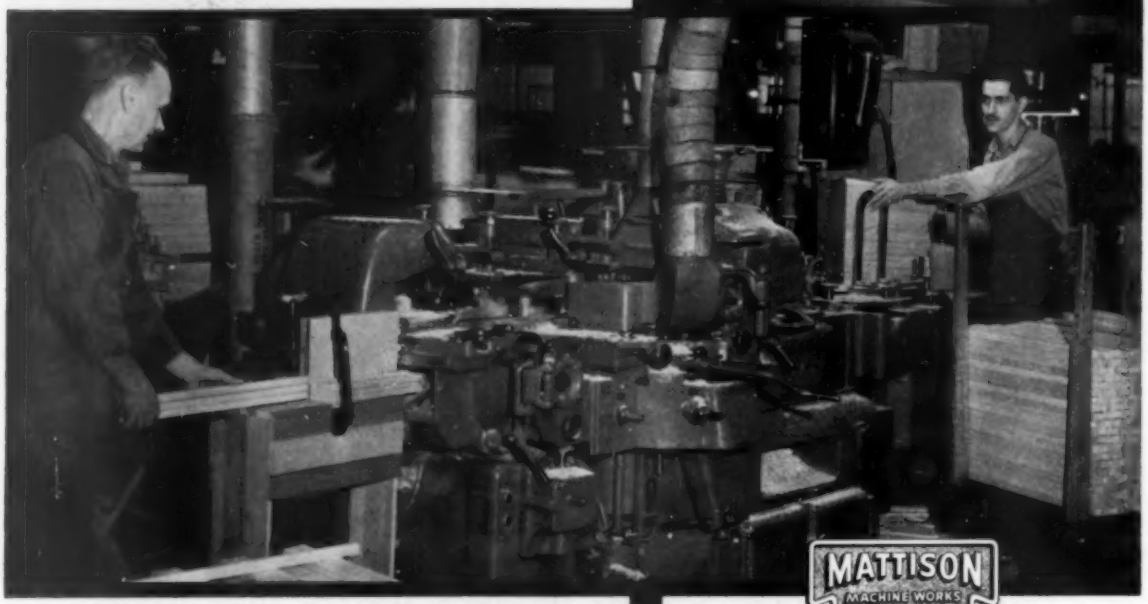
REICHHOLD CHEMICALS, INC., RCI BUILDING, WHITE PLAINS, N.Y.

Mattison No. 276 Moulder

"EASY TO SET UP

...range of feeds cuts costs!"

reports Everett Piano Company



Everett Piano Company, South Haven, Mich., names several profitable and worth-while features of the Mattison No. 276 Moulder. They find the machine exceptionally easy to set up because of the accessibility of the cutterheads. The wide range of feed speeds on the machine have been instrumental in reducing their sticker costs. Another feature they find profitable is the automatic feeding device which is particularly useful in working up short stock. Automatic feed reduces idle cutting time of the cutterheads, increases capacity of the machine, and reduces machining costs.

The Mattison Moulder is a close-coupled, rigid machine which features vibration-free operation for the production of delicate mouldings, but has the reserve power and stamina for larger mouldings, too.

Mattison Machine Works
545 Blackhawk Park Avenue
Rockford, Illinois

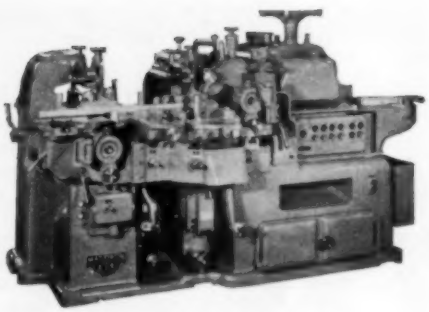
Please send bulletin on Model 276 Moulder.

Name_____ Title_____

Firm_____

Address_____

City_____ Zone_____ State_____



Mattison No. 276 Moulder

Available in 4 and 6 in. sizes, these machines feature precision, vibration-free operation for delicate moulding, as well as the power and ruggedness for larger mouldings. Close-coupled, high-speed design provides low-cost high-capacity production.

MATTISON
WOODWORKING MACHINERY

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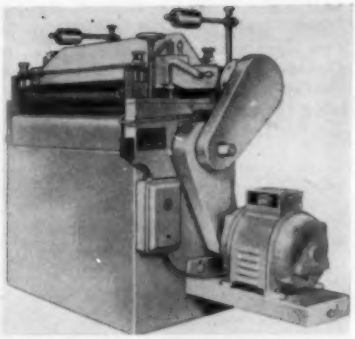
50 ft. per minute. Produces clean, accurate cut in full view of operator, as the blade climb cuts toward him. Simple adjustment permits cutting on both passes.

Offhand Tool Sharpener

MFR.: Firth Sterling, Inc., Dept. WP, 3313 Forbes St., Pittsburgh 30, Pa.
DESCRIPTION: "Method X" offhand tool sharpener, using electro spark process to remove excess metal.
FEATURES: Sharpener removes both carbide and shank simultaneously. Metal is quickly removed from tool by electric spark crossing gap between cast iron wheel, acting as electrode, and the tool which is separated from wheel by semi-solid dielectric film. Because film prevents contact between wheel and tool, wheel wear is negligible, and damage to wheel or tool is impossible. Both roughing and finishing are performed on same wheel, and there is no need for diamond or any other abrasive grinding.

Straddle Carrier

MFR.: Ross Carrier Div., Clark Equipment Co., Dept. WP, Benton Harbor, Mich.
DESCRIPTION: Series 81 straddle carrier with pivoting load hooks.
FEATURES: Has four forks, two on each side, which swing in at right angles and meet in center to form two arms under load, eliminating necessity for bolsters. Pivoting movement is controlled by hydraulic cylinders actuated by lever. Second lever hydraulically controls vertical movement of hooks. Has capacity of 20,000 lbs., road speed up to 40 mph, four-wheel steering, and four-speed synchromesh transmission. Available in six models capable of carrying loads ranging in height from 48 to 66 in., and width from 40 to 52 in.



Stock Removal Control

MFR.: Timesavers, Inc., Dept. WP, P.O. Box L, Robbinsdale 22, Minn.
DESCRIPTION: Ammeter control for "Speedsander" to regulate and register stock removal on all sanding operations.
FEATURES: Mounted on motor, control registers ratio of draw of abrasive belt against work being sanded. Operator can then make direct adjustment of pressure rolls to control stock removal. Feature also increases abrasive belt life by efficient utilization.

Matched Veneer Panels

MFR.: Williamson Veneer Co., Dept. WP, Cockeysville, Md.
DESCRIPTION: "Fineline" matched veneer plywood panels.
FEATURES: All panels of each type

NEW

Onsrud SOLID CARBIDE TIPPED

TRUE *Spiral* SHAPING CUTTERS

Spiral cutters are frequently indicated where thickness (length) of cutting edge is extreme . . . over 50% of diameter, and where stock is loose or fibrous grained.

Onsrud Carbide Tipped Spiral Shaping cutters are true spirals, 20° helix, with same rake and clearance throughout their length. Their shearing action feeds and cuts smoothly.

Carbide tipped blades, brazed to precision machined dynamically balanced bodies, hold sharp cutting edges up to 10 times longer than H.S. steel . . . REDUCE COSTS because they last longer and require less resharpening. Ideal for intensive, continuous production in hard woods. Also for plastics and non ferrous metals.

Each cutter is specially engineered for the requirements of your particular application. Write for prices and descriptive bulletin.

Onsrud Cutter Manufacturing Co.
802-22 E. Broadway, Libertyville, Ill.

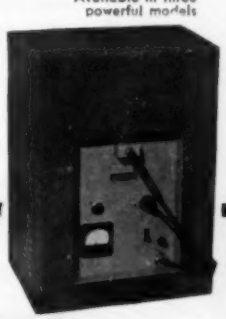
MORE PROFIT PER JOB . . . when you
WELD WOOD ELECTRICALLY!

Workrite Electronic Welder
Makes Perfect Bond
in Seconds!

Model WP 2700

No dowels . . . no nails . . . no overnight clamping! Glue is set to perfect bond in 3 seconds by pulling trigger. Welds wet or dry woods, formica, masonite, micarta, etc.

Available in three powerful models



More for Your Money . . . with WORKRITE

- More time-saving power at this low price.
- Heavy-duty hand gun with NEW non-breakable legs.
- Maximum heat indicators located in gun and panel.
- 2700 watts of ELECTRONIC power for LESS than $600.00.
- PORTABLE models to take out on the job.
- Complies with U.S. Safety code—F.C.C. regulations.
- Highest quality materials and workmanship. 120 day warranty.
- Buy with confidence . . . We've been manufacturing since 1908.

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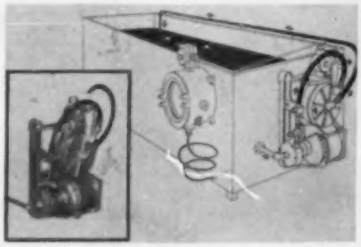
WRITE DEPT. R, FOR FREE ILLUSTRATED FOLDER

wood—Pencil Stripe Walnut, Natural Birch, Mahogany, and Comb Grain Oak—are made to match, so that no time need be wasted in matching panels for installation. Available in sizes 4 x 8 ft., 4 x 10 ft., and in some species, 4 x 12 ft.

Fork Lift Truck

MFR.: Ottawa Steel Div., L. A. Young Spring & Wire Corp., Dept. WP, P.O. Box 39, Ottawa, Kan.
DESCRIPTION: "Tracto-Lift," heavy duty fork lift truck especially designed for work on rough terrain.
FEATURES: Capable of operating in unpaved construction areas, yards, and sandy soils. Available in sizes ranging from 1000 to 15,000 lbs. capacity, with fork lengths of 30 to 108 in. Basic power units are heavy duty industrial engines and larger series are equipped with extra heavy axles and bearing assemblies. Maximum underneath clearance enables truck to travel over stumps or logs easily, and load is carried over traction wheels to ease steering under heavier loads.



Dip Tank Viscosity Control

MFR.: Spee-Flo Co., Dept. WP, 720 Polk Ave., Houston, Texas.
DESCRIPTION: "Visco Dip," viscosity control for dip tanks.
FEATURES: Combines explosion-proof Spee-Flo heater and precision liquid temperature controller. Paint is circulated out of tank through heater, and returned into tank beneath liquid level. Precision controller actuates heating unit, maintaining pre-determined temperature for paint within one plus-minus degree, thus eliminating dependency of dip tanks upon room temperature. Available in two models, the 300 and 600 series, and is designed to control dip tanks of up to 200 and 600 gallons respectively, at selected temperature level of 70 to 100°F.

Infra-Red Edge Gluer

MFR.: Ederer Engineering Co., Dept. WP, 2931 First Ave., South, Seattle 4, Wash.
DESCRIPTION: Infra-red veneer edge gluer.
FEATURES: Has speed range from 10 to 60 ft. per minute, easily adjusted, and will glue from 1/20 in. veneer up. Also handles birch or warped or knotty veneer and flitches from 3 in. wide up. Standard machines available in three sizes to make 4, 8, or 10 ft. wide sheets; other sizes to special requirements. On infeed table, special V-belt crowding device assures even contact for full length of glue lines before veneer enters machine.

Marble-Patterned Formica

MFR.: The Formica Co., Dept. WP, Cincinnati 32, Ohio.
DESCRIPTION: New Formica pattern, "Milano," in gray, antique, and pink marble patterns.
FEATURES: Made by kaleidoscopic

Continued on Page 50

We are prepared to
supply your requirements
right through the year
PONDEROSA PINE • SUGAR PINE
DOUGLAS FIR • WHITE FIR
INCENSE CEDAR
Mouldings and Interior Trim
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Cut Stock • Box Shook
OUR SPECIALTY • MIXED CARS TO THE TRADE
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You'll find this sturdy OLIVER Variety Shaper handles a wide range of work

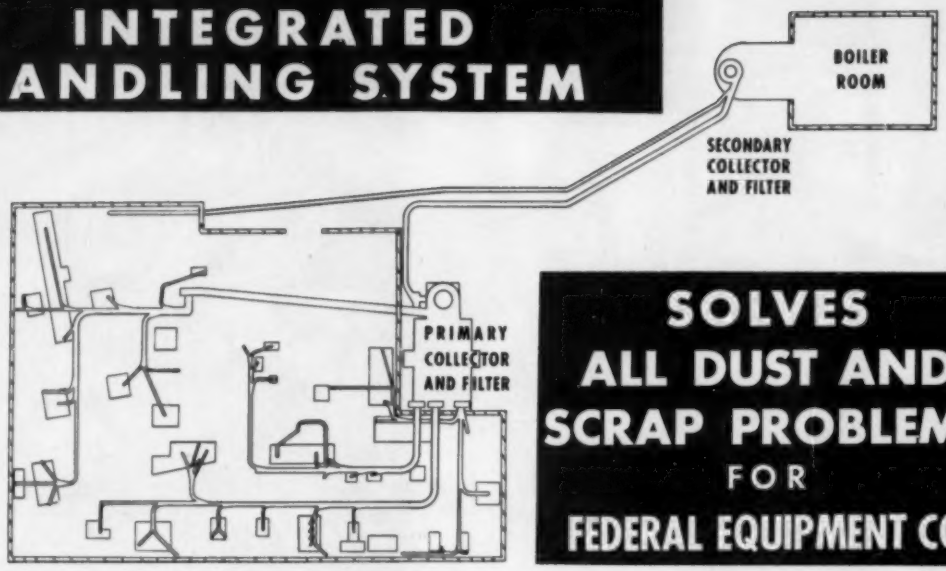
Use in small shops and large factories

This compact, low-cost Oliver Shaper stands up under continuous operation in many of the leading woodworking plants. Finished dovetailed ways support the head unit. Heavily ribbed table has wide rim for clamping forms, jigs, etc. Flexible belt-drive operates spindle at 7200 r.p.m. (10,500 r.p.m. if desired). Also offered with motor mounted directly on spindle. Write for Bulletin No. 285-T.

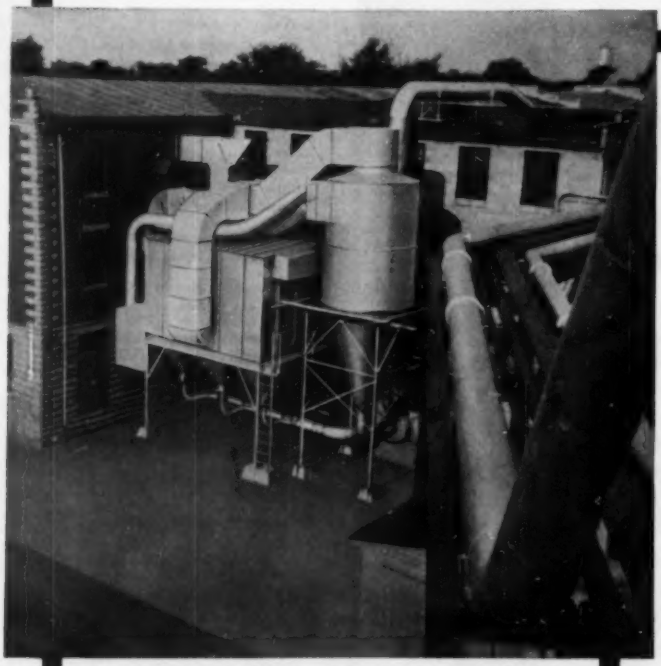
Oliver also makes a heavier single spindle and the most efficient double spindle shapers

OLIVER MACHINERY COMPANY
Established 1890 **GRAND RAPIDS 2, MICH.**

OHIO BLOW PIPE
INTEGRATED HANDLING SYSTEM



SOLVES ALL DUST AND SCRAP PROBLEMS FOR FEDERAL EQUIPMENT CO.



Federal Equipment Co. is a large producer of all types of post-office equipment and special furniture. Initial company records indicate the following results since the OBP handling system was installed.

Heating costs reduced 77%, in spite of 12,000 square feet of new floor space — 100% of wood offal and waste is now burned (formerly, only 50% could be reclaimed)—Boiler efficiency increased more than 100%.

In addition, Mr. Robert W. Chilton, Secretary-Treasurer of the Federal Equipment Co. says "Sufficient annual savings are being realized in the maintenance of our plant that the capital expenditure involved will be amortized within a maximum of six years."

This integrated OBP system collects all dust, scrap and wood flour directly from machines, as well as from strategically located floor pick-up points. In addition, the system utilizes a hogging system, two collecting and filtering stations, and necessary storage silos for conveying scrap into demand-feed furnaces.

- Converts useless scrap into useful fuel.
- Provides automatic, continuous, push-button scrap handling.
- Results in excellent community relations by eliminating dust expulsion into surrounding atmosphere.
- Eliminates fire hazard from dust and scrap accumulation.
- Extends machine life and increases operational efficiency because all equipment is kept continuously clean.
- Acts as a ventilator system during summer, but returns clean, heated air to building in winter.
- Completely eliminates manual clean-up with resulting bins, pick-up trucks, confusion and high cost.
- Creates more pleasant working conditions for everyone.

Original cost of OBP systems is surprisingly low—maintenance is negligible, and results can be extremely gratifying. Call or write today and have an OBP engineer survey your plant and give you a cost estimate.

We handle the complete job:
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OHIO BLOW PIPE CO.

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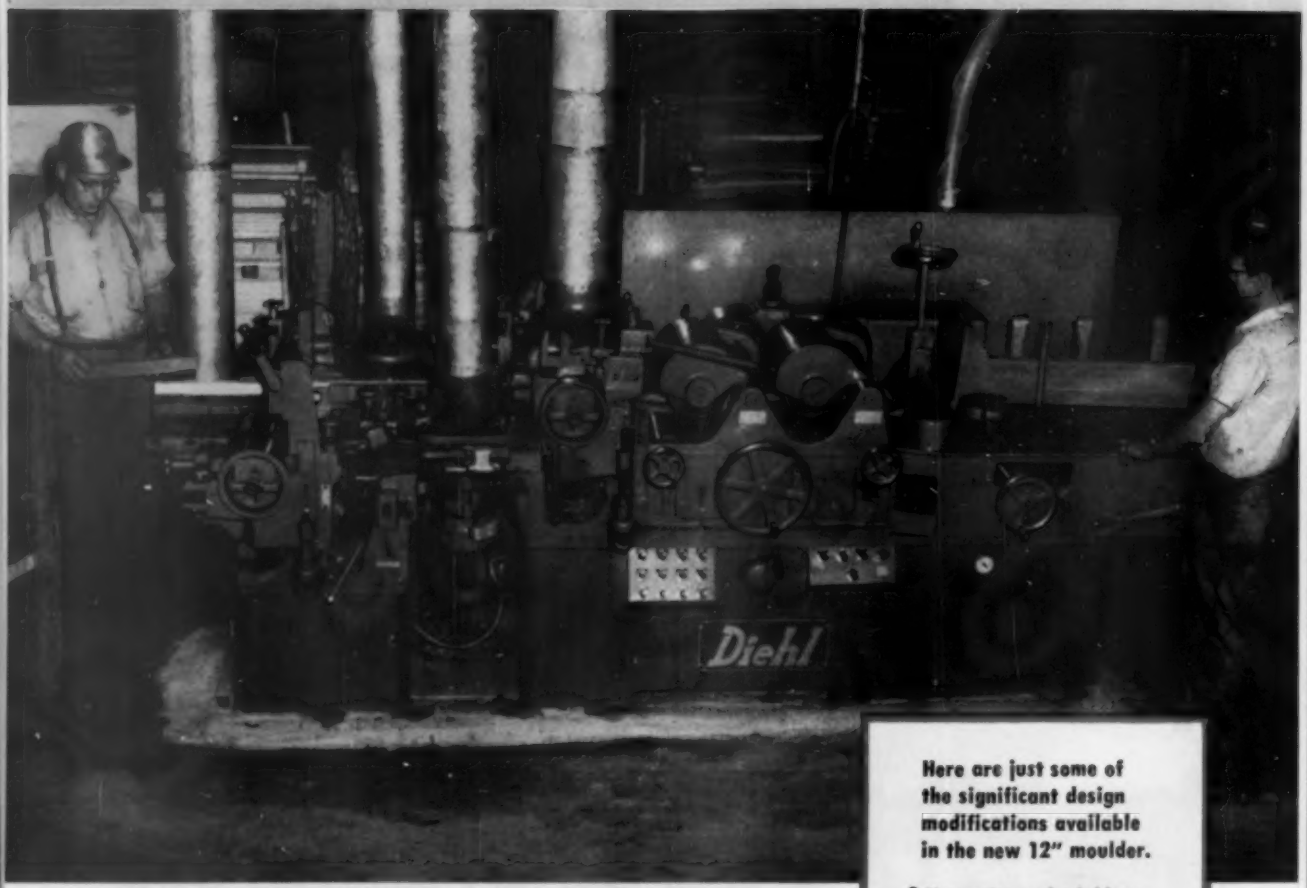
New developments from Diehl:



Shown above is one of three new Diehl 12" Moulders at American Furniture Company, Martinsville, Virginia. R. (Bob) L. Whitener, Plant Supt., reports, "We replaced five moulders with three new Diehl Moulders and with four less people we have production increase of 28.6%."

New 12" DIEHL Moulder

Patterned after the recently announced Diehl 6" and 8" Moulders, the new 12" Model offers the same smooth operation and precision accuracy . . . steadier, more positive feed without excessive roll pressure . . . clean cutting with uniform regularity, which minimizes sanding . . . absolute minimum of tearing and spoilage of stock . . . high speed, dependable operation, with minimum interruptions for readjustments or for clearing jams . . . *plus* the flexibility offered by a larger capacity machine.

The new line of 12" moulders is the result of many years experience in moulder design, manufacture and application—*plus* close cooperation with the woodworking industry. Discover how this moulder can help *you* —contact your nearest Exclusive Diehl Representative. He'll arrange a demonstration in a nearby plant.

Here are just some of the significant design modifications available in the new 12" moulder.

- New spring pre-loaded bearings in spindles to eliminate both end and radial play.
- New variable speed drive, with speeds up to 343 fpm.
- Air controlled feed roll pressure system.
- Separate electrical control panel and new style switches with electrical brakes.
- Double-tapered detachable spindles for top and bottom heads.
- Mixed spindle speeds up to 7200 fpm.
- New lightweight jointing devices.
- New chip-breaker arms.
- New cast aluminum dust hoods.
- Matcher units tilt 45° out; 15° in.
- Bottom cutting circle now 12".

Send for CATALOG

For complete information on the new 12" moulder, request Bulletin No. M-755 from . . .

THE G. M. DIEHL MACHINE WORKS, INC.
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Standard of Comparison in the Woodworking Industry

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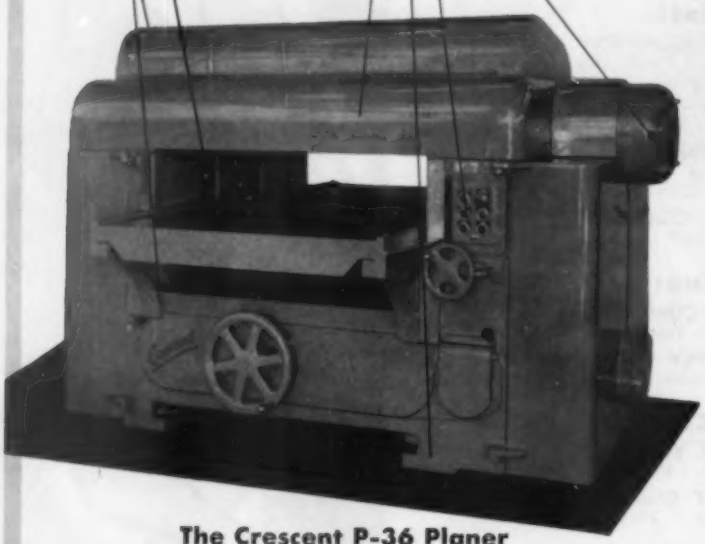
"The new Crescent P-36 has everything you need for continuous, high-efficiency production."

- Wedge bed design for extreme accuracy
- Four-knife cutterhead, precision-machined for obtaining dynamic balancing
- All working parts enclosed
- Four gear driven feed rolls; infinitely variable 4:1 speed range *as standard*
- Push-button control of table elevation
- Motors totally-enclosed *as standard*
- Torsionally-rigid, one-piece frame design, unusually insensitive to floor foundation



The Crescent P-36 Planer
is the most interesting of the time-proven Crescent line of woodworking machinery. Write for Bulletin 210.

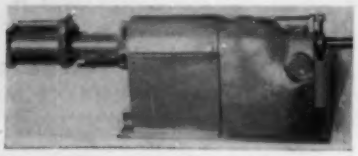
In your plant, it's ***Enterprise*** *that counts.*

The **Enterprise** *Company*
COLUMBIANA, OHIO

DISK SANDERS | SHAPERS | COMPLETELY ENGINEERED SAWMILLS | JOINTERS | BAND SAWS

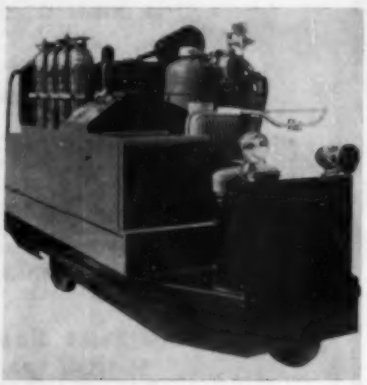
DO THE JOB BETTER IN '56 WITH ENTERPRISE

process so that pattern is never repeated, this new plastic surfacing is particularly suited for tops of tables, chests, and walls or counters.



Automatic Drilling Unit

MFR.: Electro-Mechano Co., Dept. WP, 261 E. Erie St., Milwaukee, Wis.
DESCRIPTION: Model 603 air actuated, hydraulically controlled ½ HP automatic drilling unit.
FEATURES: The electric motor driven spindle feed and speed are under separate control for any combination of feed to speed. Unit is complete with self-contained induction type motor and adjustable sheaves to provide a spindle speed range of 600 to 4000 r.p.m. The stroke length is 4 in. Available with ½ in. chuck spindle or #2 Morse taper spindle. Motor is either single or three phase.



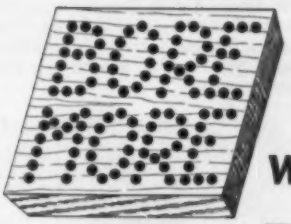
"In-Plant" Fire Truck

MFR.: Seco Engg. & Mfg. Div., Seco Safety Products Co., Dept. WP, 1300 W. Fort St., Detroit 26, Mich.
DESCRIPTION: Model S-556, "In-Plant" fire truck which carries carbon dioxide, dry chemical, water, and foam.
FEATURES: Has four major fire fighting guns, 15 cu. ft. accessory cabinet, extension ladder cabinet, two 100 ft. hoses for water fog and carbon dioxide. Has speed of 15 m.p.h. and turning radius of 96 in., and is 50 in. wide and 68 in. high.

Polyvinyl Acetate Adhesive

MFR.: Midcontinent Adhesive Co., Dept. WP, Grove City, Ohio.
DESCRIPTION: Roltite white glue, fast-setting and requiring no mixing or heating.
FEATURES: Obtaining an initial set in 20-30 min. (soft wood bonds), it reaches maximum strength in 24 to 72 hours. Glued joints can be worked as soon as initial set is obtained. Has immunity to attack by mold and bac-

YOU'LL



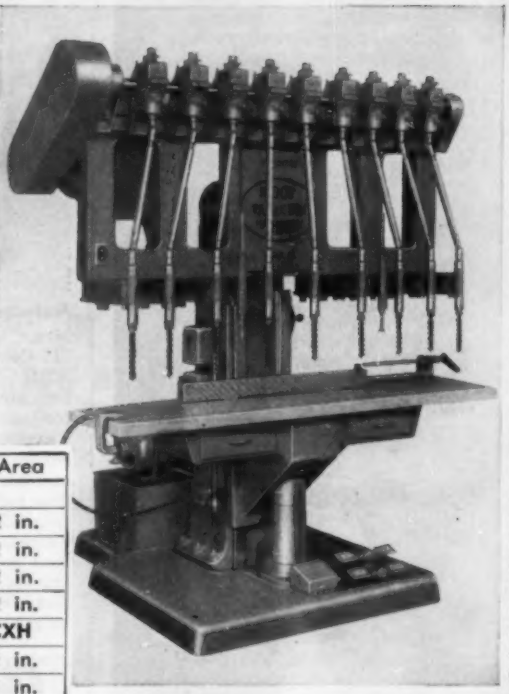
with a ROOT

THE ROOT LINE

ROUTE TO SMOOTH EFFICIENT BORING OPERATIONS

From the world's most complete line of wood boring machines

ROOT GANG BORERS
PROVED BEST BY POPULAR DEMAND

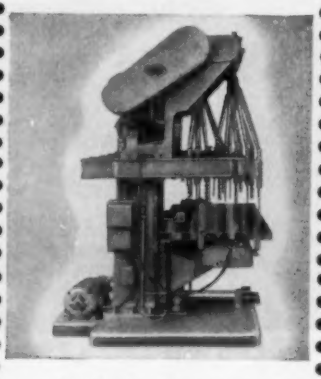


Style CH Gang Borer

A STYLE and SIZE FOR EVERY NEED

Max. Spindles	Max. Bore Area
STYLE CH	
14	4 ft. x 12 in.
18	5 ft. x 12 in.
22	6 ft. x 12 in.
26	8 ft. x 12 in.
STYLES CXH-S2 and CXH	
28	4 ft. x 22 in.
36	6 ft. x 22 in.
36	8 ft. x 22 in.
STYLE CDH	
20	4 ft. in line
24	5 ft. in line
28	6 ft. in line

CXH-S2 Front Beam Gang Borer



CXH Regular Gang Borer

CDH Straight Line Multiple Borer

Root multiple gang borers are considered the most essential and most useful of all types of wood boring machines. Noted for their great productive capacity and unusual versatility, they can handle, in one pass, almost every type of multiple boring job regardless of hole pattern or variations in hole depth, hole size and hole counterbore. Write today for full information.

B. M. ROOT CO.

YORK — PENNA.

SPEEDHEATERS... Gas, steam and hot water types. Ideal for uniform space heating with rapid air circulation.
INDUSTRIAL HEATERS... The steam unit heater for industrial plants, warehouses, garages... floor, wall, and ceiling mounting adjustable nozzle outlets.
SILENTVANE FANS... Non-overloading horsepower characteristics with stable, quiet operation.
STEAM HEATING COILS... Standard and double tube non-ferrous also heavy duty wrought iron.
VENT SETS... Direct-connected or V-belt driven compact for outdoor or indoor installation.
AIR HANDLING UNITS... Contain all components necessary for "package" heating, ventilating and air conditioning.

No. 1 of a Series

Put Air to Work Economically for:

***1. HEATING AND VENTILATING**
2. Fume, vapor and dust exhaust
3. Make-up air for balanced ventilation
4. Cooling and dehumidifying
5. Electronic Air Cleaning
6. Mechanical Draft for Steam Boilers

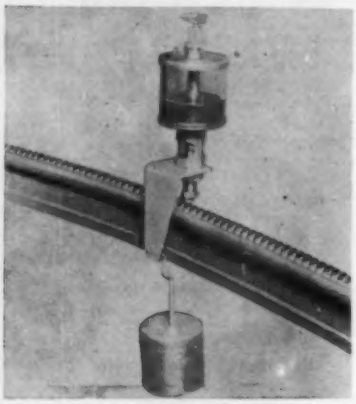
For complete application service, call your Consulting Engineer or your nearest Sturtevant Division Sales Engineer . . . or write Westinghouse Electric Corporation, Sturtevant Division, Dept. 2B, Hyde Park, Boston 36, Mass.

WESTINGHOUSE AIR HANDLING

YOU CAN BE SURE...IF IT'S Westinghouse

J-80456

teria, high mositure resistance, and dries to invisible glue line and non-abrasive film. Has permanent bond of unusual strength, is non-inflammable, non-toxic, highly freeze-resistant, and is unaffected by greases, oils, mild alkalies, acids and petroleum solvents. Available in 30 and 50 gal. drums and smaller quantities.

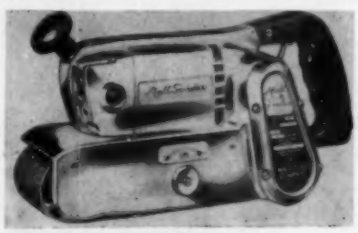


Automatic Conveyor Lubricator

MFR.: M-H Standard Co., Dept. WP, 515 Communipaw Ave., Jersey City 4, N. J.

DESCRIPTION: Automatic lubricator for monorail conveyor.

FEATURES: Consists of 1 oz. transparent oil reservoir with adjusting knob to control rate of flow, a snap action flow valve, and a sight glass to check rate of flow. In operation, counterweighted frame of lubricator positions feed nozzle directly over cable, as it travels to end of conveyor, dispensing measured amount of oil along entire length.



Electric Belt Sander

MFR.: Mall Tool Co., Dept. WP, 7725 S. Chicago Ave., Chicago 19, Ill.

DESCRIPTION: Improved electric belt sander, model 31.

FEATURES: Improved ball bearings and aluminum alloy construction contribute to easy, fast maneuvering without bearing down. The 3 in. wide by 24 in. long belt is flush on right side for sanding next to perpendicular sides, and are easily changed. Belt speed is 1350 f.p.m., motor is 25 to 60 cycle, 115 volt, and model with 230 volts is also available.

Spray-Booth Coating

MFR.: Potdevin Machine Co., Dept. WP, 285 North St., Teterboro, N. J.

DESCRIPTION: "Release-Cote," firesafe

CELSYN*

...one name for all Glidden wood lacquers and sealers

CELSYN now identifies the complete family of Glidden industry-proved wood lacquers and sealers for wood products from finest pianos to budget-priced suites.

Specify **CELSYN** for any of your wood products . . . you'll be assured of a custom-formulated finish to meet your product and finishing requirements, your cost and finishing schedules.

Glidden Technical Service and Laboratory personnel will work with your production and finishing departments to develop a **CELSYN** finish system for your product. Write for complete technical data.

*A Glidden Trade-Mark

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INDUSTRIAL FINISHES DIVISION

11005 Madison Avenue • Cleveland 2, Ohio

SALES OFFICES AND FACTORIES:

San Francisco, Los Angeles, Chicago (Nubian Division—1855 North Leclaire Avenue), Minneapolis, St. Louis, New Orleans, Cleveland, Atlanta, Reading. Canada: Toronto and Montreal.

HANDLE MORE BOARD FEET PER DAY with LEITELT LUMBER LIFTS

LENOIR FURNITURE COMPANY, LENOIR, N. C.

Users of LEITELT LUMBER LIFTS have reported these production gains:

LIFTS INSTALLED AT	PRODUCTION INCREASES
Double Surfacers	40% to 75%
Rip saws	30% to 60%
Cut-off saws	20% to 50%
Matchers and Edgers	20% to 40%
Stacking Kiln Trucks	50% to 100%
Box Car Loading	25% to 50%

Whether you're handling lumber in the yard or plant, efficient handling starts with a Leitelt Lumber Lift.

The many unexcelled features afforded by Leitelt equipment give a steady-paced flow of lumber at your first machine operation — thus maintaining a constant flow of stock through subsequent machines at a rate corresponding to their production capacities. This in itself is very important particularly where mechanized and conveyorized production set-ups can move more board feet than ever before.

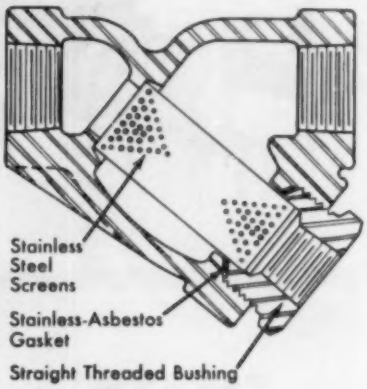
Leitelt Lumber Lifts also work for you by saving manpower and relieving labor shortages. One man can handle a Leitelt Lumber Lift, feeding stock into single or double line systems.

Leitelt Lumber Lifts are available in a complete range of sizes to handle loads from 3 to 30 tons safely and easily. Each Lift is made to fit your particular handling specifications.

Write LEITELT today for more complete information.

LEITELT IRON WORKS
SINCE 1862
"Pioneer Builders of Lumber Handling Equipment"
335 Mill St., • Grand Rapids 2, Michigan
Manufacturers of Lumber Lifts, Car Pullers, Power Driven Turntables, Subcars and LEITELT Swing Tables

spray booth coating which allows sprayed material to be peeled off walls. FEATURES: Will not burn or support combustion, so it serves as coating as well as a repellent to glues, adhesives, paints, inks, and plastics. Is applied with rag, brush or spray. Comes in quart, gallon, and 5 gallon containers.



Y-Type Pipe Strainers

MFR.: Armstrong Machine Works, Dept. WP, 909 Maple St., Three Rivers, Mich.
DESCRIPTION: New high pressure, high temperature Y-type pipe strainers.
FEATURES: Available in six sizes, ½ through 2 in., carbon moly steel strainers for oil, gas, air, water, and steam lines. Suitable for pressures to 900 lbs. and temperatures to 900°F, and maximum pressure at 100°F is 1800 p.s.i.g. Stainless steel screens are standard, either .045 in. diameter holes, 226 per sq. in., or 24 x 110 wire mesh, other screening material available.

Small Sander

MFR.: Creative Products Co., Dept. WP 203, P.O. Box 66, Wilmette, Ill.
DESCRIPTION: "Kwik-Sand, Roto-5" sander.
FEATURES: Uses standard 5 in. abrasive discs which take few seconds to change. Has safety rim to protect fingers in close work. Spindles other than one provided for drill press are available.

NEW CATALOGS and LITERATURE

Knife, Face Grinder. Samuel C. Rogers & Co., Inc., Dept. WP, 2070 Sheridan Dr., Buffalo 23, N. Y. Bulletin 220 gives pictures, description, and specifications on Series 220 standard and hydraulic extra heavy duty knife and face grinder.

24 In. Band Saw. J. A. Fay & Egan Co., Dept. WP, 2026 Eastern Ave., Cincinnati 2, Ohio. Bulletin on model 940 high-speed totally enclosed motor-driven 24 in. band saw includes diagram of parts, pictures, and specifications.

Strapping Machine. Gerrard Steel Strapping Div., U. S. Steel Corp., Dept. WP, 2915 W. 47th St., Chicago 32, Ill. Pamphlet contains close-up pictures with descriptions of models TI, N, and LK round steel strapping machines suitable for tying shipments weighing up to 100 lbs.

Overhead Chargers. Ederer Engineering Co., Dept. WP, 2931 First Ave. S., Seattle 4, Wash., Bulletin V-106 discusses, with detailed illustrations, advantages and uses of overhead chargers for veneer lathes and barkers.

Saw Blades. DeLuxe Saw & Tool Co., Dept. WP, 415 E. Commerce St., High Point, N. C. Bulletin announcing the addition of Thin Rim tungsten carbide tipped saw blades to Karbide King line. Gives full technical information along with pictures.

Electric Motors. Louis Allis Co., Dept. WP, Milwaukee 7, Wis. Bulletin 1700 contains photos and information on new open drip-proof and enclosed explosion-proof, electric motors, along with explanatory technical drawings.

Wire Rope, Chain Fittings. Thomas Laughlin Div., American Hoist & Derrick Co., Dept. WP, St. Paul 1, Minn. 28-page catalog 950-1 shows complete line of fittings for wire rope and chain.

V-Belt Drives. Allis-Chalmers Mfg. Co., Dept. WP, 1201 S. 70th St., Milwaukee, Wis. 74-page booklet contains handy multi-color tables for quick and easy selection of constant speed "Texrope" V-belt drives.

Plastic Overlay for Plywood. Crown Zellerbach Corp., Dept. WP, 343 Sansome St., San Francisco, Calif. Specification sheet presents complete technical data on "CreZon," a plastic overlay fused to plywood in the manufacturing process to give it added resistance properties.

Dry Kiln. Wel-Dri Co., Dept. WP, 730 S. Third St., Memphis, Tenn. Bulletin describes construction and operation of new custom designed kiln which uses pre-lubricated equipment.

Ball Bearing Edger. Wheland Co., Dept. WP, Signal Mountain Rd., Chattanooga, Tenn. Bulletin E-42, covering the 4 in. by 42 in. ball bearing edger, includes detailed descriptions, sectional pictures and specifications.

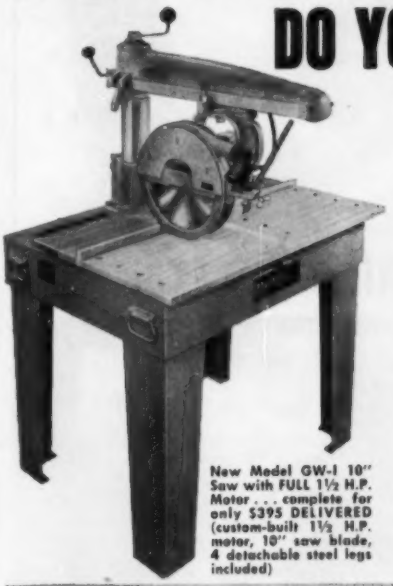
Service Bulletin. Reliance Electric & Engineering Co., Dept. WP, 1088 Ivanhoe Rd., Cleveland 10, Ohio. Bulletin H-2104, "How to Care for Jr." describes and illustrates simple, comprehensive program available to keep Reliance V*S Jr. Drives in operation at peak efficiency.

Laminating Press. Black Bros. Co., Inc., Dept. WP, Mendota 5, Ill. Bulletin 11-D includes descriptions and pictures of new air hose laminating press for moderate pressure bonding operations of hollow core flush doors, table tops, plastic-faced counter tops, and other similar items.

Pulpwood Screens. D. J. Murray Mfg. Co., Dept. WP, Wausau, Wis. 12-page booklet MC-1155-C contains general information along with descriptions of complete line of pulpwood screens for pulpwood sticks, sawmill slabs, edgings, planer trimmings, round wood or veneer cores or combination of both.

You may have spent enough to pay for an AMF De Walt machine...but

DO YOU OWN ONE?



New Model GW-I 10" Saw with FULL 1½ H.P. Motor . . . complete for only $395 DELIVERED (custom-built 1½ H.P. motor, 10" saw blade, 4 detachable steel legs included)

Even if you've invested as little as $239 in shop equipment you may not be enjoying the profit-making benefits of a De Walt®. We invite you to compare your present equipment and shop methods with these AMF De Walt features and operating advantages:

- One low-cost machine that does ALL the work of a swing saw, straight line cut-off and miter saw, table-type rip saw, dado machine, shaper plus many others.
- Savings of up to 60% or more in capital equipment investment alone.
- 75% savings in floor space alone! AMF DeWalt can be placed against any shop wall—instead of in the center of the shop.

Find out about ALL of AMF De Walt's many advantages—send today for free new idea book for industry. MAIL COUPON TODAY!

LOOK AT THESE OTHER AMF DEWALT ADVANTAGES!
- Top-side Cutting for Safest Cutting
- 90% Savings in Layout and Marking Time
- Reduces Waste—Salvages More Lumber
- One-minute Change-over, No Shut-down Worries
- Reduced Fatigue, Greatest Operating Ease and Safety
- Modern Straight-line Materials Handling

Another AMF Product
DE WALT POWER TOOLS
Lancaster, Penna.

SEND FOR *FREE* NEW IDEA BOOK ON INDUSTRY! 16 pages packed with illustrations. Shows you dozens of ways to cut costs on cutting jobs, time-motion study.

AMF DE WALT, Dept. WW-56-2, Lancaster, Pa.
Please send me your new idea book for industry.
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AUTOMATE PLANT

Continued from Page 21

operation. But from the time it arrives and the railroad box car set on the Andersen indoor siding, it is never handled by human hand if mechanical means of handling is possible. The lumber as it comes out of the boxcar is stacked on pallets, covered with asphalt-laminated, creped Kraft paper, moved by one of two straddle trucks to the yard outside and stacked by one of the firm's 24 fork lift trucks. The company also owns 179 pallet trucks.

This wrapping insures sufficient supply of raw material for work at all times, yet frees valuable warehouse space for storage of processed materials. The paper covering offers year-round protection from rain, sleet, snow or sun.

Each unitized package is given a number and an IBM card is fastened to it. The card follows the lumber on its complete journey through the plant—where it furnishes complete cost control figures.

When lumber is designated for manufacture, it is unstacked in the warehouse or yard by the stacker, and moved by the straddle truck to the Rough Cutting room, a busy, efficient place and a model of plant layout for expediting handling. The pallets are set at the right of a workman who feeds the boards to the ripsaw. The take-off man, at the other end, removes boards of the correct width to a bunk beside him, guides the original plank to a hardwood slide that carries the board down to a conveyor which returns it to the feeder and at the same time elevates it to feeding table height.

As soon as the bunk beside the take-off man becomes sufficiently filled, the load is lifted and moved by tram rail across the aisle and deposited in the feed bunk of one of the cut off saws. The room is set up at the approximate ratio of one ripsaw to three cutoff saws—or 9 ripsaws to 26 cutoff saws.

To the left of the line of cutoffs are three conveyor belts. The first belt catches scrap as it falls from each saw, carries it upstairs where sufficiently long pieces are set aside to be glued up into core stock sold to others for doors. The remainder goes to the hog.

The cutoff saws cut usable stock into two sizes: regular 6/4 and special 6/4. As a cutter saws a piece of stock to size, he moves it to his left, onto a conveyor that follows a bridge above and across the three conveyor belts. A special metal selector on this conveyor pushes regular 6/4 stock off the belt onto the middle conveyor below. Special 6/4 stock moves on and is automatically dropped onto the third conveyor. These conveyors unload their separated stock at the end of the belt where they are unitized, then moved by fork-lift truck to the warehouse to await further fabrication.

But efficient layout is not limited to the Rough Cutting Room. It's just as efficient in the Mill Room. Here you'll find a surface and moulder set in tandem. Thus stock fed to the surface pushes the stock ahead of it into the moulder—thereby relieving a feeder for the moulder for work elsewhere.

Nearby is an elevator catching stock at the off-feed end of a moulder. It eliminates need for a man at the take-off end. Its level is controlled by hydraulic power. Moreover, it is mounted on a revolving table that swings around for easier unloading.

Perhaps the place where Andersen has achieved the greatest progress towards automation is in the application of metal weather strips to wood members. So close are the tolerances that no glue, nails or screws are used to secure them. In almost every instance, the insertion operation is combined with another.

Here at this machine, for instance, the operator places a weatherstrip in

LARGE FANS LIKE THIS
Make Modern Kilns Like This
Marsh Lumber Co., Dover, Ohio, gets production drying from this modern Moore Cross-Circulation Kiln, utilizing large multi-blade Moore Fans, designed and manufactured in our own plants.
Moore Fans deliver a greater, more uniform circulation through each sticker course. Learn how the Moore System can be one of your best investments. Write today for information.
You Get MORE—with MOORE
MOORE DRY KILN COMPANY
Oldest and Largest Manufacturers of Dry Kilns and Veneer Dryers
JACKSONVILLE FLORIDA
BRAMPTON, ONT. CANADA
VANCOUVER, B. C. CANADA
NORTH PORTLAND OREGON

the groove previously made in the wood member. Then he feeds it to the machine which anchors the weather strip in the wood, then drills 15 holes using four multiple drills. Over there is a similar machine that also secures weather strip in a wood member, then bores holes on three sides of it.

At another point is a chisel and chain mortiser which also inserts a piece of weatherstrip. Nearby is a machine that routs and drills a wood member as it inserts a weather strip.

Andersen employees are proud of their company, its methods, its products, of each other. The company is proud of the caliber of men and women for work there—and grateful that each time it has expanded it has been able to hire employees as capable and efficient as the old ones. As a matter of fact, many of the new employees are sons and daughters of older employees.

Consequently, Andersen Corporation feels justified in saying the quality of its products are not only an achievement—they're a tradition.

WOOD YOU BELIEVE IT?

The first significant commercial application of wood preservative in this country was in 1848, when a dipping plant was built at Lowell, Mass. Today there are between 275 and 300 wood preserving plants in the U. S., employing about 25,000, with an annual payroll of about $70,000,000.

?

3,500,000 ft. of lumber were used in the construction of the fabulous Disneyland, new amusement park recently opened in Anaheim, Calif.

?

Said to be longest in the U. S. is pneumatic conveyor transporting chips from two sawmills to a pulp mill a mile away at St. Helens, Ore.

?

The word "lumber" is said to have been derived from Lombard Street in London where pawn shops were originated by the Medici family. Piles of pawned goods were soon called "Lombard", which eventually was applied to large piles of anything, including lumber. In time, Lombard was corrupted to lumber.

?

Every county of the Douglas fir region of Oregon and Washington now contains certified tree farms.

?

A plane tree on an Aegean island, reputed to be over 2000 years old, has its lower branches supported with marble columns.

THE NEW Jenkins 193
DOUBLE END MULTIPURPOSE MACHINE

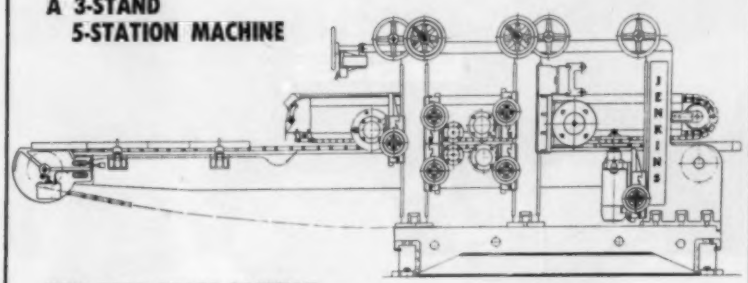
COMPLETELY NEW ..IN EVERY DETAIL..

Designed to do More Operations . . . Faster . . . and with Greater Accuracy.

. . . YOU GET A BETTER PRODUCT—AT LESS COST

In addition to ordinary Double End Tenoner operations, the 193 Multipurpose Machine does such complex operations as high speed Multiple Double End Edging, Double Surface Grooving, Texturing, and many other multiple operations in one pass.

A 3-STAND 5-STATION MACHINE



NEW FEED SHAFT POSITION . . .

The old style feed shaft with overhanging bracket is gone. The new Feed Shaft position over the New Saddle and Rail Base eliminates vibrations and flexing of shafts at the new high speeds. Materials Handling around the machine is easy.

New Wide Range of Cutter Positioning.

180° Tilting trim and Cope Arbors to cut above and below Chain.

90° Tilting Tenon Arbors (optional)

Up to 25 inches between Copes Spindle and Feed Shaft reduces lateral stock shift, and tear-outs.

Dado top, bottom, or both

INFINITE RATES OF FEED . . .
With the New Vari-Speed Drive you maintain maximum feed speeds at all times, with infinite variations in new high speed ranges.

FASTER SET-UP . . .
because you have more room between stands and around cutter equipment.

Jenkins WOODWORKING DIVISION
DEPT. WW
of
Curt G. Joa, Inc.
SHEBOYGAN FALLS, WISC.

See Latest Developments in Cutting, Drying Veneer

MEMBERS OF THE AMERICAN Walnut Manufacturers Association met at the U. S. Forest Products Laboratory recently to watch demonstrations of the Laboratory's latest developments in the cutting and drying of veneer.

Highlight of the meeting was a demonstration of the use of special instruments developed by the Laboratory to replace rule-of-thumb methods of setting the angle of the knife and the horizontal opening between the knife edge and the nosebar on a veneer lathe or slicer.

Both instruments are relatively easy to make, and the parts for each can be purchased for less than $25. The knife-angle indicator consists of a precision level and a protractor. The short arm of the protractor ends in a flat plate designed to fit against the ground surface of the knife. The level is attached to the longer arm of the protractor.

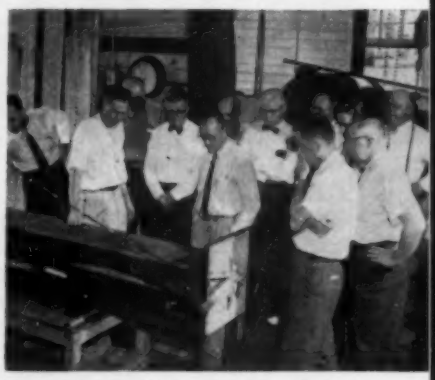
In use, the longer arm is adjusted until it is level, and the angle at which the knife stands is read to a fraction of a degree on the vernier scale of the protractor. If the knife is to be set at a predetermined angle, the protractor is set at that angle. Then the instrument is placed against the knife, and the carriage is tilted until the proper setting is made.

The horizontal opening between the knife edge and the nosebar is adjusted by use of a specially mounted dial gauge, the stem of which projects above the knife edge until it contacts the edge of the nosebar. The gauge then shows the magnitude of the opening between the knife and nosebar. Once the instrument is worked across the knife, the alignment will usually be perfect from end to end.

Visitors were also shown the Laboratory method of softening veneer logs for cutting by heating them electrically instead of in water or in steam.

Veneer specialists heated two 8-ft. flitches of walnut, each about 14 by 7 ins. in cross section, in 12 minutes at a total consumption of 7½ k.w.h.

USE OF INSTRUMENTS for setting the angle of the knife and horizontal opening between knife edge and nosebar on veneer slicer is demonstrated



TWO 8-FOOT flitches of walnut heated to 160° F. in 12 minutes with electric current carried by thick, flexible conductors attached to electrodes that transmit power to wood

Speed up production — lower manufacturing costs by using Pamudo's Specialized Service for Industrial Users. Fir plywood and West Coast lumber items for furniture, containers, luggage, or even surveyor's stakes. In standard sizes or machined to your specifications. Contact our Tacoma office, branch office, or representative listed below.

PACIFIC MUTUAL DOOR COMPANY

Pamudo

Contact Industrial Specialist and Engineer, Lloyd M. Manley, 805 East Grand St., Elizabeth, N. J., or Tacoma office.

TACOMA 1, WASHINGTON OFFICE
TWX TA048 and WUX (Western Union direct wire)
Telephone MArket 4108

BRANCHES: ST. PAUL 4; KANSAS CITY 5, MO.; CHICAGO 38; BALTIMORE 31; ELIZABETH, NEW JERSEY.

Living Room Tables Courtesy Mersman Brothers

Bedroom Set Courtesy Heywood-Wakefield Co.
Photo by Hedrick-Blessing Studio

Dining Set Courtesy Conant Ball Co.
Photo by Holland Illustrative

Contribution to FINER living

Furniture manufacturers the Country over have long recognized the enduring qualities of fine hardwoods — carefully selected and beautifully treated. For longer than a half century they have been the largest single consumer of Atlantic Hardwoods.

We are proud to pay tribute to their contribution to the grace and charm of the American Home — proud of our part in serving the leaders of this industry who have won the confidence and appreciation of thoughtful homemakers.

In this never ending search to make home more livable and beautiful is a whole new world of ideas and exciting creations to be desired and cherished.

In so many things for finer living the centuries have proven often, so seldom is there any substitute for the natural loveliness of lasting hardwoods.

THE ATLANTIC LUMBER CO.
88 BROAD STREET, BOSTON 4, MASSACHUSETTS
1055 SENECA STREET, BUFFALO 10, NEW YORK

First in a series

ALONG THE PRODUCTION LINE

(Photo Courtesy Acme Steel Co.)

LAMINATED TRUSSES are wrapped and steel-strapped for shipment

Packing Laminated Timber

A MANUFACTURER SPECIALIZING in production of glued laminated arches, beams and trusses that range up to 60 or even 100 ft. in length has quite a packing problem, since it may take two flat cars joined together to make a single platform to support them. The problem has been solved by wrapping all parts spirally with a heavy protective laminated kraft covering and strapping it in place with steel strapping, applied over the exterior protection.

Eliminate Press Sticking

A CONCERN which specializes in hot press application of resin paper laminates to panel surfaces has a list of instructions for preventing troublesome sticking to the press platens. It is prominently displayed beside each press and reads: (1) Clean press platens with a mild abrasive, such as Bon Ami. (2) Scrub and rinse with acetone to remove all traces of oil or grease. (3) Lubricate all cauls with liberal spread of silicone grease. (4) Bake treated cauls for 1 hour at about 325° F. in press. (5) Polish cauls with soft cloth to remove silicone grease.

Conveyors for Furniture Assembly

AFTER USING a conveyorized assembly operation for one year, a large furniture plant revamped its layout for more efficient operation. In the current conveyor layout the sub-assembly lines and drawer assembly lines run parallel to the main assembly line but in the opposite direction. The drawer and sub-assembly lines are somewhat shorter than the main line and are positioned to deliver sub-assembled units to the main line where they are needed.

Pressurized Finishing Room

USING A RECENTLY DEVELOPED air input system, 40,000 cu. ft. of air per minute is delivered into a finishing room where exhaust fans remove about 35,000 cu. ft. per minute. The excess of 5,000 cu. ft. per minute serves to effectively pressurize the finishing room against incoming dust or dirt. The air is conditioned and cleaned as it is brought into the room through self-cleaning oil filters. In cold weather fresh air is heated to a controlled temperature by passing it through steam coils before delivery to the finishing room.

Air Pumps for Finishing Materials

WHEN THE INSURANCE COMPANY objected to prevailing fire and explosion hazards uncovered after a fire, a cabinet

WALLY WALNUT Says:

"Here's Why MIDWEST Offers You your BEST BUY in WALNUT"

- You buy a **specialized product.** We select, cut, and sell only Walnut lumber — not a dozen different woods.
- You buy a **quality product.** We supply you choice, usable steamed Walnut lumber, the best to be had.
- You buy a **specific product.** Steamed Walnut lumber, dimension, and squares—the products of our sawmill and dry kilns—are our specialty. Air dried stock is available for immediate shipment.
- You buy an **economical product.** Our prices are competitive. What's more, our varied locations usually mean delivery at lower freight rates.

Write TODAY for Detailed Prices or Other Information!

MIDWEST WALNUT CO.

COUNCIL BLUFFS, IOWA

WARTRACE, TENN. WILLOW SPRINGS, MO.

Is wet lumber...

	Yes	No
Bringing customer complaints?	■	■
Spoiling tools & finished products?	■	■
Adding to freight, labor and production costs?	■	■
Downgrading your stock?	■	■

ANY YESSES? Then moisture is costing you money. It will pay you to find out how Moisture Register *3-second* moisture tests have helped solve these problems in . . .

Lumber Mills & Dealers
Sash & Door · Cabinet Shops
Flooring · Furniture Factories
Molding · Planing Mills
Veneer & Plywood

FAST · ACCURATE
PORTABLE
ANYONE CAN OPERATE
DEPENDABLE
RUGGED
GUARANTEED

Write now for free literature on model RF4, and 2 week free trial

ELECTRONIC MOISTURE REGISTER Instruments

MOISTURE REGISTER CO., Dept. WP
P.O. Box 910, Alhambra, California

plant switched over to air-operated transfer pumps to supply finishing materials to spray booths. Now air-operated transfer pumps, installed on permanent supply drums, feed finishing materials through pipe lines to each spray booth to provide each operator a choice of materials. Aside from the improved safety feature, this system is said to have cleaned up areas at the spray booths formerly occupied by material drums. Substantial savings in waste of materials and handling costs have also been effected.

BOARD reveals plant's inventory of lumber at a glance

Lumber Inventory at a Glance

A TACK BOARD on the office wall of the factory manager at Kittinger Co., Buffalo, N. Y., furnishes an inventory of wood at a glance. All lots of wood are given a number which is written on a 2 x 2 in. card and thumbtacked into one of the four sections into which the board is divided by horizontal lines. The top section is allocated to lumber in the yard, the second section shows lumber in the kiln, the third indicates that being fabricated in the plant. The bottom section is reserved for lumber that needs to be reordered.

The Marvelous Montgomery

BLO-HOG

Patents Pending

(The only all-purpose hog in the world)

Eats Up Everything!

C.I.T. Terms Available

. . . including Pine, Oak, Gum, Hickory, Elm, Cedar, Wet Veneer and Sandy Bark. Conveyor-fed — no attendant required. Positively protected from major damage by tramp steel. All connections locked — nothing to shake loose. Maintenance costs unbelievably low.

". . . Dear Mr. Montgomery: It is an unbelievable machine and it is still hard to believe that it is actually handling the enormous volume of scrap we are feeding into it. We operate the hog without an attendant — which means a considerable saving." — J. B. BLACK, Ocala Mfg. Co., Ocala, Fla.

Sumner Iron Works, Everett, Washington, W. Coast Rep.
Canadian Sumner Iron Works, Ltd., Vancouver, B.C., Canadian Rep.

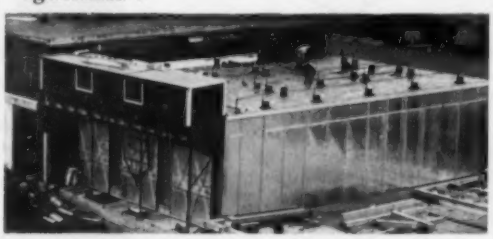
Write for bulletin and details

JACKSONVILLE BLOW PIPE CO.

P. O. BOX 3687 - JACKSONVILLE, FLORIDA

We goofed...

and we *certainly* want to rectify our error. In a recent ad, we incorrectly captioned this photo "the *U.S.S. Enterprise* with the *Queen Mary* in the background." Actually, it's the *U.S.S. Forrestal* with the *S.S. United States* in the background. Our only excuse is that we're dry kiln experts . . . and obviously not too hep on ships! We hope all of you who called the error to our attention will forgive our "ship ignorance".



Here's the STANDARD PREFABRICATED DRY KILN installation at the Newport News Shipbuilding & Dry Dock Company, builders of both the *U.S.S. Enterprise* and the *U.S.S. Forrestall* Read what this firm says about STANDARD prefab kilns in a specially-prepared booklet. Write for your FREE copy.

Manufacturers of Internal Fan Kilns

STANDARD

Engineers and Manufacturers Since 1887

DRY KILN COMPANY

P. O. BOX 5708 . . . . INDIANAPOLIS 21, IND.

BRANCH OFFICE: REDMAN ENGINEERING SERVICE • HIGH POINT, N. C.

Report Brisk Business at Chicago Winter Market

Manufacturers, Retailers expect boom year, tougher competition — Little change in styling — Wood more evident — Prices up 3 to 5%

THE 1956 WINTER MARKET in Chicago was the best on record. Buyers in attendance reflected optimism as a result of the boom year just completed, and looked forward to an even better year in 1956—even though they expected it to be a tough one competitively.

Manufacturers offered merchandise which should enable retailers to attract a larger segment of the consumers' spendable income. Prices were up approximately 5%. Increases had come about gradually since the last June market and many increases have been in effect several months.

There was a noticeable disappearance of many low-end promotional lines.

In a general way there were no radically new style trends in this market. However, there was a strong continuation of trends which were apparent in the last several markets.

Wood arms were more evident—in fact, there was much wood trim on all upholstered pieces. Chair arms especially made great use of wood arms and trim.

Case goods followed a continued trend toward up and off the floor pieces with finer lines and less bulk. More refinement of cases and pulls help in the lighter look. Finishes were darker with the medium brown tones most important although two-tone finishes continue strong.

Occasional table lines were predominantly modern, with finishes as dark as mahogany in some cases.

Little change was noted in styling in unpainted furniture from the last market. Stack units and functional pieces continued as best sellers.

Of the wood furniture shown 62% was modern. In bedroom and dining room pieces French and Italian Provincial took second place with 14% of the total. Early American continued its traditional 10 to 12% place.

Cherry moved forward to tie oak for third place. Mahogany and walnut led the parade with walnut used in highest priced lines and mahogany being used in moderate priced.

There was a significant increase in Scandinavian and Italian provincial styles.

Shop Grade California REDWOOD

For Laminated Products

The remarkable glue-holding properties of California redwood—both heartwood and sapwood—make it an ideal material in the manufacture of laminated wood products.

HEARTWOOD AND SAPWOOD are alternated to give unusual striped effect in these laminated redwood store display racks.

HANDSOME END TABLE combines laminated redwood top and wrought iron legs into smart modern design.

The laminator also values redwood's high dimensional stability, and its economy—for he can work with the varied lengths of low-cost shop grade.

Let us give you full details on redwood for lamination—or for any other specific woodworking use. Write the California Redwood Association, 576 Sacramento Street, San Francisco 11.

The Association includes sixteen of the nation's foremost redwood lumber mills: Northern Redwood Lumber Co., The Pacific Coast Co., The Pacific Lumber Co., Rockport Redwood Co., Simpson Redwood Co., Union Lumber Co., Warm Springs Redwood Co., Willits Redwood Products Co., Wolf Creek Timber Co., Inc., Arcata Redwood Co., Eureka Redwood Lumber Co., Hammond Lumber Co., Hollow Tree Redwood Co., Holmes Eureka Lumber Co., Hulbert & Muffly Co., Inc., M & M Wood Working Co.

CORES FOR DOORS are made from short lengths of economical shop-grade redwood glued into smooth whole.

WOODICTIONARY

CONDUCTIVITY

The amount of heat expressed in b.t.u.s transmitted in one hour through one square foot of homogeneous material one inch thick, for each degree of temperature (F.) difference between the two surfaces of the material.

WHO'S WHO among men who know glues*

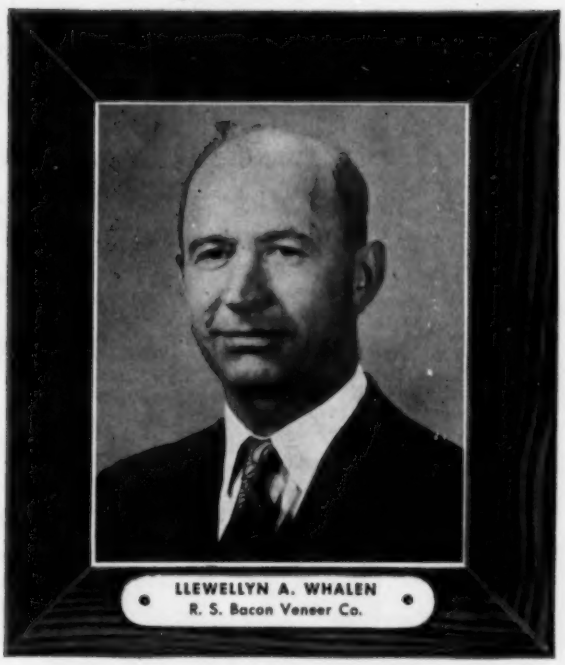
ROBERT I. COPPES
Coppes, Inc. • Nappanee, Indiana

When you think of Nappanee, you're bound to think of kitchen cabinets... when you think of "Napanee" you just naturally think of Coppes, because over the years, generations of Coppeses have spent their advertising dollars to make Coppes, Nap(p)anee, and kitchen cabinets synonymous.

Plant superintendent of this 78 year old manufacturing company, and final authority on the increasingly important subject of adhesives, is Robert I. (Bcb) Coppes, grandson of co-founder, John D. Coppes.

And, if you think the right glue is important to your adhesive jobs, just take a moment to consider the fluctuating temperatures and varying degrees of humidity kitchen furniture has to endure! Coppes builds custom hardwood kitchen cabinets to retain their beauty, sturdiness and efficiency through generations of home dwelling.

Except for five years in the army (two of these in the South Pacific) "Bob" Coppes has devoted his entire business life to protecting the Coppes heritage.



LLEWELLYN A. WHALEN
R. S. Bacon Veneer Co.

For nearly three decades—28 years to be exact—"Red" Whalen has spent most of his waking hours with wood and wood utilizations that require adhesives.

Today he is general superintendent of the R. S. Bacon Veneer Co., Chicago, manufacturers of domestic and foreign veneers and originators of "PANAWALL," the grooved panel that simulates tongue and grooved heavy planking.

Prior to his affiliation with Bacon Veneer Co., Mr. Whalen had charge of the gluing department of General Plywoods, Louisville, Kentucky;

... prior to that, plant manager, Plywood Products Corp., Bay City, Michigan; prior to that, quality control manager, Plywood Division, The Mengel Co., Louisville.

Married, with a daughter, 13, and a son aged 5, "Red's" hobbies are sports in general—tennis, golf and fishing in particular—reading and puttering.

Do you realize just how many really vital glue jobs there are—from laminating intricate panels for fine musical instruments to giant trusses to support a roof? Is it any wonder that we of National Casein take so seriously this job of delivering the right glue for your job—where you want it, when you want it, and how you want it—tank car, tank truck, drum or bag!

Purpose of our series on "Men Who Know Glues" is to stimulate our own and your thinking on the subject of glues as well as to remind you that you'll stick with National Casein glues—because they stick for you.

National Casein *

601 West 80th Street, Chicago 20, Illinois • Broad and Fulton Streets, Riverton, New Jersey

DEBARKER was being installed at time of fire

Debarker, Chipper Represent $800 Revenue in 9-Hour Shift

WHEN FIRE DESTROYED the Angelina Lumber Co. dry kilns, dry sorter, rough sheds, and more than 4 million ft. of lumber July 12, 1954 at Keltys, Texas (See WOOD & WOOD PRODUCTS, December, 1953) plans were already under way for installation of a new central power plant. Major equipment items had been purchased for the project during 1953 and included a generator to supply current for the electrification of the entire plant, including log debarker and a chipper being installed.

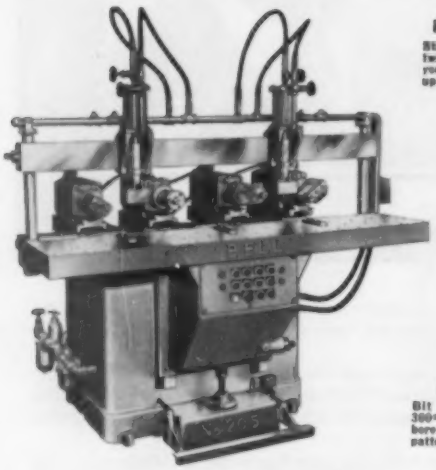
Now in full operation E. L. Kurth, Jr., vice-president and sales manager, Angelina County Lumber Co., reports very efficient performance from the log debarker and chipper installation. Says he, "We are getting about 48 units a day, which means in gross revenue between $700 and $800 on a nine-hour shift."

INSTALLATION of chipper was part of plan for electrifying entire plant

Some Equipment and Machines Used at Modernized Angelina County Lumber Co. Mill

Debarker .....Nicholson Mfg. Co.
Chipper.....D. J. Murray Mfg. Co.
Crane...Orton Crane and Shovel Co.

Are you paying for a "205" —without getting these benefits?



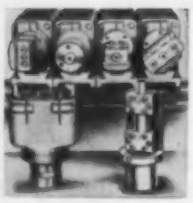
It Can Grow!
Start with one or two heads. Add as your needs require... up to 14 heads.

It's Flexible!
Table raises 6 inches—speeds set-ups. Will handle your 1,001 boring jobs.

It's Fast
Set it for automatic cycling, or manual operations—one cycle and stop.

It's Accurate
Boring depth is adjustable. (7" maximum.) Stroke is by smooth air power.

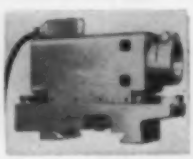
It's Adaptable
Bit clusters rotate through 360°. Same cluster can bore horizontal or vertical pattern.



You have a wide choice of spindle clusters, both standard and special. Each one fits any motor unit on the "250". Units have one to six boring spindles arranged in line or staggered patterns. Each rotates 3600, giving full flexibility in set-ups.

Bell's new Electric-Pneumatic BORING MACHINE will pay for itself in labor saving, in increased production, and in accuracy of work (shortening time in assembly)! As a single-purpose machine in large plants you can't beat its efficiency . . . and yet it is just as ideally suited to general-purpose boring. The "205" can replace an entire group of smaller, less flexible machines.

If present inefficient methods are eating up the cost of a "205", why not change over—and start to enjoy savings!



In each compact boring head a 1½-H.P. motor delivers power directly to boring bit, with no lost power through unnecessary linkage! (2 H.P. available for extra-tough jobs.) Smooth air power moves bit heads into the work. Speed and depth of stroke can be regulated.

For complete information, write to—

Bell MACHINE COMPANY
73 Jackson Dr., Oshkosh, Wisconsin

COMING EVENTS

Feb. 6-7: Annual meeting, National Wooden Box Association, Shamrock Hotel, Houston, Texas.

Feb. 14: 12th annual meeting, Hardwood Plywood Institute, Drake Hotel, Chicago.

Feb. 23-24: 26th annual meeting, Hardwood Dimension Manufacturers Association, Grand Hotel, Point Clear, Ala.

Mar. 1-2: Eastern Canadian Section, FPRS, Royal York Hotel, Toronto, Ont., Canada.

Mar. 5-9: 25th short course in wood adhesives and gluing, Teco Engineering Co. laboratory, Washington, D. C.

Mar. 12-16: Hardwood Lumber Grading short course, Pennsylvania State University School of Forestry, University Park, Pa.

Mar. 15-16: Annual meeting, Southern Hardwood Producers, Inc., Roosevelt Hotel, New Orleans.

Apr. 2-6: Annual spring hardwood lumber grading short course, State University of New York College of Forestry, Syracuse.

Apr. 19-20: Spring meeting on synthetic wood products, Northeast Section of Forest Products Research Society, Springfield, Mass.

May 15-18: Annual Convention, National Plywood Distributors Assn., Colorado Springs, Colo.

June 4-7: 10th annual meeting, FPRS, Asheville, N. C.

BOLTER

Continued from Page 30

diameter and shorter than 6 ft. are set aside for the bolter. The others go to the bandmill.

"Farmers are more inclined to bring in short logs because they're easier to handle," explains Mr. Souder. "They can cut over their land and haul logs to the mill without investing in expensive logging equipment."

From both the farmer's and the company's standpoint, the bolter permits greater recovery of lumber from the tree. Even limbs as small as 7 in. in diameter can produce four good usable 4/4 boards. Crooked logs become straight when cut at the bend. Consequently, both yield and utility of product are increased, an important consideration today because more good lumber can be cut from second growth timber when logs are in short lengths.

The bolter itself is a self-contained machine consisting of a circular saw blade mounted in a table top. Power at Wonderland is furnished by a farm tractor. It is operated by two men—a feeder and a take-off man. Nevertheless, it is capable of processing between 7,000 and 7,500 bd. ft. per day.

A fence on the table top has four selective settings providing accurate control over width and thickness of stock. And the machine can be set to cut four separate dimensions without further adjustments. The fence also permits the log to be sawed parallel to the bark—thereby getting the maximum yield of the best lumber in the log. Sapwood is separated from the heartwood—the last piece to come out of the log.

At Wonderland, as the boards come off the bolter, the take-off man moves them to the production line. Here the boards are cut to length and ripped, and any defects removed. Actually, there is very little waste.

Squares are air-dried in the yard, but dimension stock is moved immediately to the kilns to be dried.

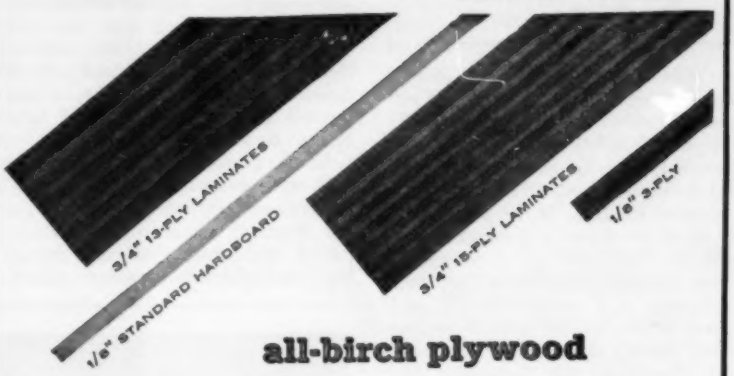
"It's cheaper to dry lumber here," explains Mr. Souder. "It eliminates the necessity of shipping stickers, and dry lumber weighs less than green—thus freight costs are kept down."

Looking for Help —or a New Job?

You reach the right people in the right places—get best results—when you advertise in the

WOOD & WOOD PRODUCTS TRADING POST

See Page 78

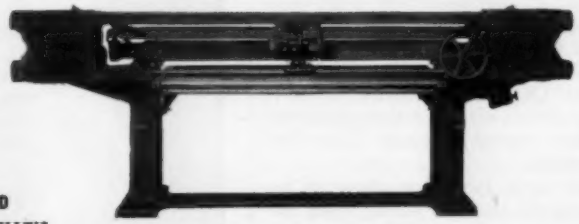


all-birch plywood

From the world-famous forest resources of Finland, imported all-birch plywood—sizes up to 4' x 6', all thicknesses . . . cut to size to buyer's specifications. • All-birch ¾" 13-ply or 15-ply laminates for cabinet doors, table tops, etc.; lumber core for table tops; door panels of birch plywood (⅛" 3-ply). • Also standard hardboard, ¼" thickness, with an exceptionally hard surface. • *Dependable deliveries from Finland's oldest plywood source. Quotations submitted—your inquiries invited.*

FINWOOD INDUSTRIES INC. Station Plaza, Ramsey, N. J.

DEMON FOR HIGH PROFITS . . . HIGH PRODUCTION!



- HIGH SPEED
- SEMI-AUTOMATIC
- DUST-PROOF
- REVERSIBLE
- CAPACITY TO 10'8"
- FRICTION-FREE STROKER

MODEL D SINGLE-BELT SANDER

Year-in and year-out shop use continues to prove the high efficiency of Oakley quality sanding machines. Operators and owners alike depend on Oakley for the sanders and the "know-how" to get the job done . . . profitably!

MODEL D-1 SANDER & POLISHER

Positive superior quality!
Stock is ready for finishing room with a single handling! The D-1 is also reversible with double belt. Without sponging or glue sizing, it removes tape, polishes and eliminates raised grain.

WRITE FOR COMPLETE DETAILS TODAY!

The Oakley Co. SINCE 1934 BRISTOL TENNESSEE

QUALITY CONTROL

Continued from Page 28

tent himself. He should hire quality control personnel and they should report directly to him.

If the installation stems from the president, chairman of the board, general manager or any other top executive, over the head of the production or plant manager, the organization probably will not be as effective. There is more cooperation between production and quality control personnel if the quality control people report directly to the production manager. In fact, this teamwork can eliminate the necessity of the quality control supervisor having a staff of inspectors.

Next, consider the place the quality control supervisor will occupy in the organization. What will be his relationship to the other supervisory employees?

Every individual's work can be classified into one of two broad categories, either staff or line. Staff men compile and provide information that helps line men carry out the basic operations of the factory.

Quality control is first, last and always a staff function. It helps and advises line personnel in quality control matters, thereby helping them to carry out their assignments more effectively.

Quality control should present information to line supervisors as effectively and understandably as possible. It should provide tools to help line personnel perform their jobs, but should not have authority or responsibility in production matters. Unwilling or uncooperative foremen should be sold on the quality control program rather than forced to it through giving quality control authority over line personnel.

The most important phase of installing the program begins when the quality control supervisor has been hired and his place in the organization determined. It involves selling the program to line foremen and people under them who will be responsible ultimately for carrying out his recommendations. This phase of the installation is extremely important, for it will determine both the future efficiency of the system and the size of staff required.

Every worker from the man on the bench through the foreman practices quality control in some form. It may be crude, but every supervisor has some means of maintaining standards of work in his department. The quality control supervisor is merely an extension and improvement of the foreman's previous system. He does scientifically with statistics and graphs what the foreman did formerly by rule of thumb. Although his method is much superior, it must have the wholehearted acceptance of the line foreman to be successful.

If an organization is already familiar with staff operations such as cost, incentive, or scheduling systems, the job of selling quality control is simplified. The tendency to resist change has been partially overcome already in the process of setting up these programs.

The actual work of selling should be done jointly by the production manager and the quality control supervisor. They should explain to a foreman that quality control's function is to help him. They should show how it will provide him more information than he has had in the past and enable him to carry out his assignments better. They should explain the control charts and other instruments of the system in terms he can understand.

Unwieldy terminology will only confuse and discourage the foreman. Above all, they should emphasize the fact that quality control will not be a policing operation.

Once the line foreman comprehends the program, quality control will have no need for line authority, nor need to report directly to the general manager. The quality control supervisor has won respect for his ideas and services based on both his ability and the merits of the system.

A satisfactory program can be carried out with only one quality control man in a small factory. He should make the original installation of the control charts. Once they are explained, if at all possible, the foreman should be charged with maintaining them. The actual inspection work and testing can be done by either the foreman himself or by people under him. But if the foreman administers the charts himself, he quickly spots and corrects errors in his department.

Quality control's purpose is not to compile a mass of data and charts for the files. Rather, it provides a means of quickly detecting and correcting poor quality. If testing is the foreman's responsibility, he will take corrective action immediately instead of waiting for a discussion of it at the next quality control meeting.

Having regular line employees instead of staff inspectors do the testing is important in a small factory. It saves the added expense of non-productive employees. But even in a large factory the law of diminishing returns eventually eliminates a large inspection force.

In factories without a quality control system, many line employees do some inspection work as part of their regular duties. For example, many machine off-bearers check the quality of material coming from their machines. It is only a small extension of their duties to have them record what they see. In some operations – such as splicing or sanding – the foreman has a 100% sampling from the off-bearer's figures. This arrangement leaves no doubt in the foreman's mind of the efficacy of quality control, so he doesn't regard it as an unfathomable mystery to be avoided whenever possible.

Having the individual foreman responsible for his own charts, allows for laxness on his part. However, a supervisor's ability is measured by his production, cost, yield and quality performance. If statistical quality control can help him with his departmental costs and yields and reduce the amount of final inspection defects traceable to his department, he will administer the quality control charts honestly for his own as well as the company's benefit.

Even though maintenance of the charts is delegated to the foreman, the quality control supervisor should still check them daily and consult with the foreman and production manager frequently.

In addition to his work on the control charts, the quality control supervisor should be available for work on special quality projects suggested by the production manager or foremen, or initiated by himself. Sometimes these special projects indicate immediate cost savings or quality improvements. If so, the work on the control charts can be deferred in favor of a project which can result in immediate cost saving.

The ideal organization is one in which even line foremen are constantly after the services of the quality control supervisor to help them and are continually suggesting ideas themselves for improving quality in their departments.

ROCKWELL-BUILT

new DELTA

10" tilting arbor bench saw

Here's a really practical saw for woodworking shops—the great new Delta 10" Tilting Arbor Bench Saw! That's because it gives you all the features and advantages of a big 10" saw—at small saw cost! It's the ideal "second" saw for you and here's why:

BIG CAPACITY—You get full 10" capacity (cuts stock to 3⅛" deep and rips to the center of a 48" panel) that can handle overflow in your shop, eliminating bottlenecks at low cost.

EASY TO MOVE—Move it in and out of your production line wherever you need it. Reduces costly materials handling.

RUGGED CONSTRUCTION—Light in weight for easy handling, it's solidly built to assure dependable, trouble-free service even under punishing operation.

HIGHLY ACCURATE—It's precision-engineered to handle jobs with reliable accuracy—and it cuts fast with little waste.

SAFETY—Real built-in safety assures positive protection to operator—and saw.

LOW COST—You get all this capacity, performance and convenience—*plus real Delta quality*—at an amazingly low price!

See this all new Delta 10" Bench Saw—try it—compare it! Get all the facts and make up your own mind! Your Delta Dealer is listed under "TOOLS" in the classified pages of your phone book. Send coupon for complete details—today!

DELTA QUALITY POWER TOOLS

Another product by Rockwell

Get All The Facts . . . Send The Coupon!

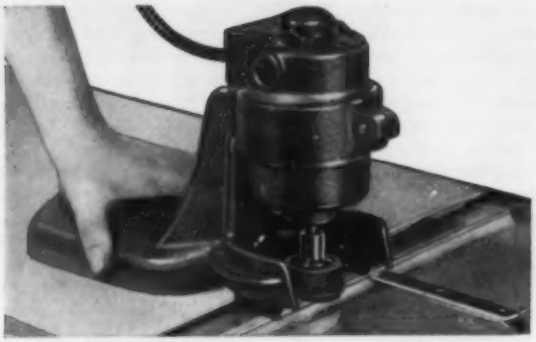
DELTA QUALITY COSTS NO MORE

DELTA ROCKWELL

Delta Power Tool Division,
Rockwell Manufacturing Co.
6688 N. Lexington Avenue, Pittsburgh 8, Pa.

☐ Please send name of my nearest Delta Dealer.
☐ Please send Delta Industrial Catalog on new Delta 10" Tilting Arbor Bench Saw.

Name_____ Title_____
Company_____
Address_____
City_____ County_____ State_____



EVERY SHOP with a JOINTER NEEDS THIS SHARPENER

FOSTER PORTABLE JOINTER BLADE SHARPENER grinds the blades in perfect alignment with the table and without removing them from the head. Set-up time and down-time usually required in removing and replacing blades is saved. Used on any size jointer.

No intricate jigs or fixtures are necessary; the Foster Sharpener merely slides over the table. Sharpener has positive index stop and locking device. Amount of cut is determined by raising or lowering the table. After sharpening, all blades cut uniformly.

Foster Portable Jointer Blade Sharpener is a low cost, time saving tool which does a complete precision grinding job in less time than is required to set up other devices. It is the only PORTABLE tool in the field. PATENTED. *Write for Circular.*

FOSTER SUPPLIES COMPANY

6122A, N. Milwaukee Ave., Chicago 30, Ill.

PATENT DIGEST

Cutter Disc

W. F. Hagen. U. S. 2,725,907, Dec. 6. A cutter disc for use on a sanding or grinding machine, the perimeter of which is provided with a number of saw blades.

Woodworking Machine

T. Jinks. U. S. 2,722,249, November 1. Woodworking machine for forming moldings including a frame, a shelf, molding cutting units, and means for delivering individual sticks longitudinally through it.

Saw Mill

L. W. Carver and E. H. Christensen, U. S. 2,722,954, November 8. Portable saw mill with built-in self-leveling mechanism.

Drying Plant

A. S. Morch. U. S. 2,722,762, November 8. Drying plant for wood such as wood, plywood, wall board, etc., comprising a housing, a drying passage with an intake and an outlet for material treated, ducts for admitting heated air, and an exhaust for moisture.

Saw

R. K. A. Wiig. U. S. 2,722,928, November 8. An engine-operated portable wood felling saw.

Wood Stains

H. A. Toulmin, Jr. (to Chadeloid Corp.). U. S. 2,723,898-9, Nov. 15. Wood stains containing flavanone azo dyes and brighteners.

Hardboard

B. O. Stewart (to National Gypsum). U. S. 2,724,307, Nov. 22. Fragmentizing raw wood; subjecting to high temperature-pressure conversion in aqueous liquor formed by prior conversions; rapidly separating the liquor; forming a mat and consolidating with heat and pressure.

Ornamented Wood Panel

O. Brown. U. S. 2,724,642, Nov. 22. A plywood panel having a face ply of the rotary cut type, the outermost surface wood presenting a distinctly shaded synthetic tone pattern of light and dark contrasted effects.

Planer

P. W. Ludwig. U. S. 2,722,956, November 8. Planing device having opposed vertical planer heads arranged to plane simultaneously opposite sides of a work surface.

Bamboo Rods

K. Hayashiguchi. U. S. 2,723,693, Nov. 15. Making fine bamboo rods for use in the manufacture of bamboo blind comprising cutting the pipe lengthwise and flatwise; polishing; and finally slitting into fine rods.

Gullet Teeth For Saws

L. O. Markham. U. S. 2,725,906, Dec. 6. Improvement in gullet type saw teeth comprising an elongated tooth whose base is of the same thickness as the saw to which the tooth is connected.

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***PURCHASING SUPERVISOR:* W. P. Campbell, Montgomery, Ala. 2-1833**

Power Hand Saws

A. E. Broster and W. H. Leslie, U. S. 2,725,904, Dec. 6. Inverted portable hand power-saw guide comprising an inverted elongated tray provided in the bottom with a slot through which the saw works.

Router Guide

W. C. Schacher. U. S. 2,726,690, Dec. 13. A flat contoured plate for guiding the cut of a router.

Debarker

P. Harwood and G. R. Jacob (to J. R. Gordon) U. S. 2,726,691, Dec. 13. Debarking machine having underlying bark-stripping helical rollers and an overlying adjustable pressure roller.

Kiln

H. L. Morris. U. S. 2,26,459, Dec. 13. Board kiln for drying box boards and similar wooden pieces.

Laminated Wood

G. M. Williams (to United States Rubber Co.) U. S. 2,724,675, Nov. 22. Bonding layers of wood together with a film consisting of a cashew nut shell oil-modified phenolic resin, a hardening agent for the resin, a butadiene-acrylonitrile rubber, and diatomaceous earth.

Laminated Boards

G. Kahr. U. S. 2,725,910, Dec. 6. Method of producing laminated boards or slabs with a parquet-patterned wearing surface.

Jig Saw Attachment

J. A. Pulera. U. S. 2,725,905, Dec. 6. Jig saw attachment for a circular blade bench saw.

Lumber Gluing

T. J. Sievert (to Kroehler Mfg. Co.). U. S. 2,725,909, Dec. 6. Lumber gluing apparatus comprising a frame having an annular base supported on rollers movable on a horizontal track, upright columns, a central frame, work supporting platforms equipped with clamps, fluid pressure means for independently moving movable elements, infra-red heat lamps and means for rotating the frame.

Barking Machine

F. G. Ednell and T. R. Ednell. U. S. 2,725,908, Dec. 6. Barking machine having revolving and rotatable cylindrical bark-removing tools.

Wood Stabilization

M. S. Hudson. U. S. 2,726,169, Dec. 6. Dimensionally stabilizing wood by pre-treating with an acetone solution of an amine and then impregnating with an acetone solution of dichloromethyl ether and heating.

Gang Saws

C. V. Winquist (to Mill Engineering and Supply Co.) U. S. 2,723,689, Nov. 15. Compensating saw overhang and log feed means for gang saws.

Dogging Device

J. H. Marsh U. S. 2,723,690, Nov. 15. A dogging device for sawmills comprising a head block with a log abutting knee, an included arm affixed to the knee, a dogging arm, a tooth on the arm, and fluid pressure means for swinging the arm into log engaging position.

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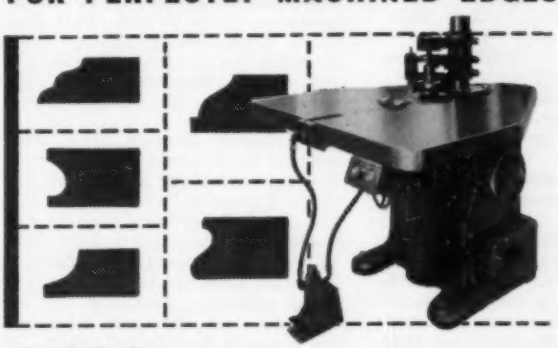

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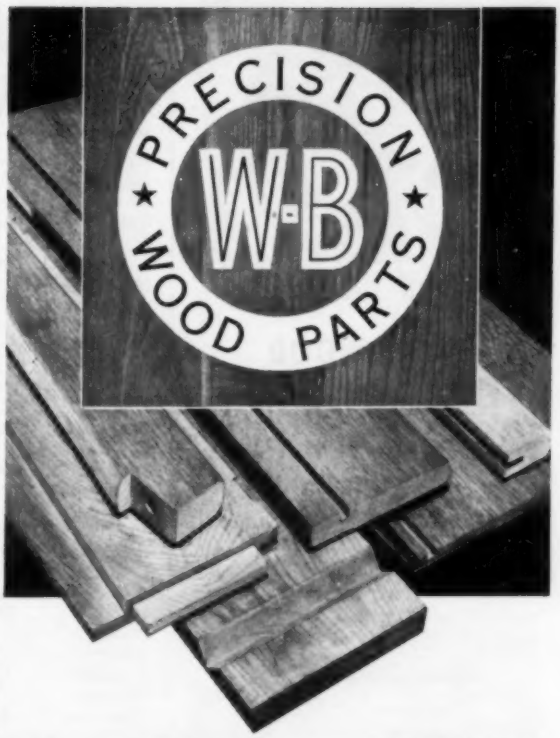

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NAMES and EVENTS

INDUSTRY NEWS

New FPRS Officers. Late in 1955, officers were elected for seven chapters of the Forest Products Research Society. Their chapters and positions are given below:

Mid-South: Chairman R. M. Boehm, Masonite Corp., Laurel, Miss.; Vice-Chairman D. M. Fisher, Jr., Southern Lbr. Co., Warren, Ark.; Secretary & Treasurer John Wells, Wells Furniture Mfg. Co., Laurel, Miss.

Carolinas-Chesapeake: Chairman John Colucci, Jr., Southern Box & Lbr. Co., Wilmington, N. C.

Ohio Valley: Chairman Carl Seng, Jasper Desk Co., Jasper, Ind.; Vice-Chairman R. H. Elliott, Standard Dry Kiln Co., Indianapolis; Secretary Lee Everhardt, Bauer Bros. Co., Springfield, O.; Treasurer P. J. Fenn, Tell City Chair Co., Tell City, Ind.

Midwest: Chairman L. J. Fitzpatrick, J. J. Fitzpatrick Lbr. Co., Madison, Wis.; Vice-Chairman J. J. Allegretti, Masonite Corp., Chicago; Secretary D. W. Bensend, Dept. of Forestry, Iowa State College, Ames; Treasurer W. A. Kluender, C & NW Railway System, Chicago.

Florida - Georgia - Alabama: Chairman J. B. Huffman, School of Forestry, Univ. of Florida, Gainesville; Vice-Chairman E. Conway, School of Forestry, Univ. of Georgia, Athens; Secretary & Treasurer L. F. Rand, Florida Furniture Industries, Inc., Palatka; Past Chairman D. B. Richards, Forestry Dept., Alabama Polytechnic Institute, Auburn.

Upper Mississippi Valley: Chairman H. Olson, Chapman Chemical Co., St. Paul, Minn.; Vice-Chairman H. Crandall, Mosinee Paper Mills Co., Mosinee, Wis.; Secretary W. B. Wallin, School of Forestry, Univ. of Minnesota, St. Paul; Treasurer P. H. Lane, Northern Lakes Forest Reserve, Wausau, Wis.

Great Lakes: Chairman S. B. Preston, Univ. of Michigan, Ann Arbor; 1st Vice-Chairman G. G. Garlick, Protection Products Mfg. Co., Kalamazoo, Mich.; 2nd Vice-Chairman F. Atkinson; Secretary S. W. Tammina, Hekman Furniture Co.; Treasurer E. B. Applegate, Travis-Applegate Co., all of Grand Rapids, Mich.

Lumber Firms Honored. Four companies prominent in the wood industry have been certified as Excellently Managed by the American Institute of Management. They are: United States Plywood Corp., Olin Mathieson Corp., Weyerhaeuser Timber Co., and Powell River Co., Limited. This places them among the 408 American and Canadian firms so cited by the Institute for 1955. United States Plywood Corp. is receiving the award for the sixth consecutive year. Weyerhaeuser Timber Co. for the fifth; Olin Mathieson Corp. and Powell River Co., Ltd., for the second consecutive year.

President George McNeff, 1st Vice-President H. D. Spalti, and Treasurer Milton Smith are officers of the newly organized Southwestern Furniture Manufacturers Assn., 3906 Lemmon Ave., Dallas, Texas

New Furniture Association. Furniture manufacturers from Texas, Arkansas, and Oklahoma met recently to organize a new association, Southwestern Furniture Manufacturers Assn., which will help members keep pace with the rapid growth of the furniture industry in that area and to exchange views on manufacturing and design problems. Its membership will include manufacturers of Texas, Oklahoma, New Mexico, Arkansas, Louisiana, Mississippi, and other fabricators who distribute heavily in that area.

George McNeff, Falcon Mfg. Co., Dallas, was elected president and H. D. Spalti, Oliver-Myers-Spalti, of Athens, Texas, was named first vice-president. Regional vice-presidents are: Oklahoma—Jack Longmire, Oklahoma Furniture Mfg. Co., Guthrie; and Arkansas—John Harper, Fort Smith Lines, Fort Smith. Milton Smith, Economy Furniture Co., Austin, Tex., was elected treasurer. Other state vice-presidents will be named soon.

SHPI March Meeting. The annual meeting of Southern Hardwood Producers, Inc., will be held March 15-16 at the Roosevelt Hotel, New Orleans. The National Lumber Exporters Assn. meeting, in conjunction with SHPI, will also have a meeting on March 14.

Discussion topics will cover the national situation, including the new minimum wage law and its impact, and subjects directly related to production and marketing of southern hardwoods.

Daniels Honored. Upon his retirement as chairman of the management committee of Douglas Fir Plywood Assn. for the past 17 years, E. W. Daniels was honored at a recent meeting of that association. His successor, Arnold Koutonen, of St. Paul & Tacoma Lumber Co., presented to Mr. Daniels a 26-ft. Chris-Craft pleasure and fishing boat, along with a complete set of fishing equipment.

An ardent fisherman and boating enthusiast, Mr. Daniels has also spent considerable time and effort upon civic and industry activities. He is a former

president of Harbor Plywood Corp., Aberdeen, Wash., and is still active with the firm, which he helped establish.

New Hardwood Group. A new lumber association has been incorporated, the Northwest Hardwood Association. During its annual meeting, at the University of Washington, members acted upon a number of resolutions and voted honorary memberships to Dr. Donald H. Clark and Jack R. Pfeiffer, Oregon Forest Products Laboratory, Corvallis.

E. J. Nist, Seattle Box Co., was elected president; Hamlet Steele, Bellevue Dry Kiln Co., vice-president; and H. P. Caldwell, Morton Lumber Co., Seattle, treasurer.

Directors: Paul Avery, Avery Hardwood Mill, Olympia; Paul Barber, Oregon Alder-Maple Co., Willamina; Clarence Engstrom, Everett; J. H. Hauberg, Jr., Pacific-Denkmann Co., Seattle; Robert McGregor, West Coast Hardwoods, Ltd., Vancouver, B. C.; Victor Nelson, Goodyear Nelson Hardwood Lumber Co., Sedro Woolley; L. R. Smith, L. R. Smith Hardwood Co., Longview; Henry Washkuhn, M & W Mill Co., Woodinville; A. P. York, Educators Mfg. Co., Tacoma.

Kirby Brochure. Kirby Lumber Corp., Houston, Texas, has printed a profusely illustrated brochure outlining the resources, aims, and facilities at its forest products plant, Silsbee, Texas.

WOOD Awards. Announcements have been distributed to colleges and universities opening the seventh annual "WOOD Awards" competition sponsored by WOOD & WOOD PRODUCTS and FPRS. All graduate students are invited to submit papers on forest products research by May 1, tentative titles by April 15, to the executive secretary of Forest Products Research Society, Box 2010, University Station, Madison 5, Wis.

The first place winner will be given $350 with certificate and the second winner, $150 with certificate, at the 10th annual meeting of the Forest Products Research Society, June 4-7, at Asheville, N. C.

These awards are designed to encourage outstanding students to pursue careers in forest products, and even those who don't win the awards have an opportunity to bring their interest and ability to the attention of men in the industry.

Red Cedar Research. Western Red Cedar Siding will be the subject of a research program this year for which the Western Red Cedar Lumber Assn. will make fund grants. The purpose will be to determine best methods of application and surfacing, and will be directed by Clark C. Heritage of Tacoma, Wash., who has been counseling industry in research and development programs since he retired recently as development director of Weyerhaeuser Timber Co.

Adhesive Course. Timber Engineering Co., research affiliate of NLMA, will offer its 25th short course in wood adhesives and gluing, Mar. 5-9, at its laboratories in Washington.

NPDA Meeting. Albert Hersh, president of Industrial Plywood Co., Jamaica, L. I., N. Y., was elected second vice-president of National Plywood Distributors Assn. at its recent membership meeting held in Miami Beach, Florida. Five new directors were elected to represent their regions: Wm. L. Gouline, Central Building Co., Baltimore, Md.; Roland R. Remmel, Southland Building Products, Little Rock, Ark.; Larry S. Clark, Twin City Hardwood Lbr. Co., Minneapolis, Minn.; Kenneth J. Shipp, California Builders Supply Co., Oakland, Calif.; and Jay Wallenstrom, Roddis Plywood Corp., Marshfield, Wis., representing membership-at-large.

Advisory Council. A Technical Advisory Council has been appointed for the University of California Forest Products Laboratory, Richmond, to advise on the industry's research needs. Chairman is E. B. Birmingham, Hammond Lbr. Co.; vice-chairman is W. F. Holzer, Crown Zellerbach Corp., and secretary is R. F. Bjorn, Woodwork Institute of California, all of San Francisco.

Additional council members are: A. T. Hildman, Michigan-California Lbr. Co., Camino; Lee Moffett, American Forest Products Corp., San Fran-

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This BIG capacity "Light-Heavyweight" is a glutton for work!

Rip fence is so accurate you don't have to waste time on test cuts! Single lever locks front and rear in one movement; spring loaded pins assure *automatic squaring.*

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cisco; R. A. Colgan, Jr., Shasta Forests Co., Redding; T. C. Combs, Arch Rib Truss Co., Los Angeles; Edward Feldman, Furniture Mfrs. Assn. of Southern California, Los Angeles; W. G. Van Beckum, Pacific Lbr. Co., San Francisco; A. W. Agnew, The Pacific Coast Co., Sonoma; Charles Berolzheimer, California Cedar Products Co., Stockton; and B. C. Manson, Arcata Redwood Co., Arcata.

Grading Course. Lumber grading practice and intensive study of the Rules Book will comprise the annual spring hardwood lumber grading short course to be conducted by the State University of New York College of Forestry, Syracuse, April 2-6.

FPRS Student Awards. Chairman C. R. Lockard of the Northeast Section, Forest Products Research Society, has announced opening of competition for the society's 1956 annual awards to three outstanding college seniors in forest products study. The object of the Student Annual Award is to encourage the best men possible to enter the field of forest products. The prizes are $250, $100, and $50, to be presented at the spring meeting on April 19-20 at Springfield, Mass.

Judges are: Prof. Albert Dietz of M.I.T.; Jack E. Batson, Kittinger Co., Buffalo, N. Y.; Prof. Newell Norton, Penn. State University; Chester Babcock, Babcock Machinery Co., New York, N. Y.; Prof. Gregory Baker, University of Maine; and Chairman Prof. Eric Anderson, State University of New York College of Forestry.

Grading Course. All facts in grading and inspection of native hardwoods will be covered in the 4th annual short course, Mar. 12-16, on hardwood lumber grading given by the School of Forestry of Pennsylvania State University, University Park, Pa.

Wood Market Guide. Eight specific fields that are ripe for research and development are charted for lumber and wood products manufacturers in "Guideposts to Wood Markets," issued by Timber Engineering Co., 1319 18th St. N.W., Washington 6, D. C.

Tropical Woods Book. The latest edition of "Tropical Woods" has been published containing a research paper, "Properties and Uses of Tropical Woods, V" by F. F. Wangaard, W. L. Stern, and S. L. Goodrich of Yale University's School of Forestry. Copies may be obtained for $1.00 from the editor, 205 Prospect St., New Haven 11, Conn.

No. 3 Grade Change. Western Pine Assn. has announced revision of its grading rules for No. 3 Shop lumber. Instead of the former general description, the new rules clarify the grade by defining type and grade of cuttings which must be contained in No. 3 Shop pieces. Copies may be obtained from the association at 510 Yeon Bldg., Portland 4, Ore.

Particle Board Pilot Plant. The nation's first pilot plant for technique development of wood particle board will be constructed at the laboratory of Timber Engineering Co., NLMA research affiliate. The aim of the plant is to adapt European techniques to U. S. production and materials to aid future producers in avoiding costly production pitfalls.

Flush Door Standard. The printed edition of Hardwood Veneered Hollow Core Flush Doors, Commercial Standard CS200-55, has been issued by the Commodity Standards Div., of the U.S. Dept. of Commerce. Copies may be purchased from the Superintendent of Documents, Govt. Printing Office, Washington 25, D. C., for 10c each.

Oak Flooring Meeting. Re-election of officers, naming of four new directors, and discussion of the advertising and publicity programs were highlights of the annual meeting recently of the National Oak Flooring Manufacturers' Assn. in Memphis, Tenn.

Re-elected as officers and directors were President J. G. Smith, Arkansas Oak Flooring Co., Pine Bluff, Ark.; Executive Vice-President Henry H. Willins of Memphis; and Vice-President W. W. Miller, Jr., Miller Bros. Co., Johnson City, Tenn.

New directors are E. C. Gates, Fordyce Lumber Co., Fordyce, Ark.;

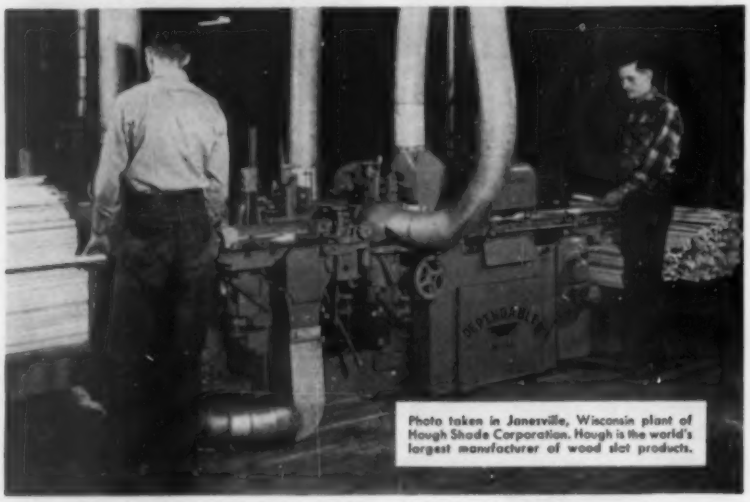
Photo taken in Janesville, Wisconsin plant of Hough Shade Corporation. Hough is the world's largest manufacturer of wood slat products.

Here's A Record That's Hard To Beat!

Two Dependable Moulders Have Operated On Two Shifts For Two Years With Little Maintenance According To Hough Shade Corporation.

In a recent letter to Dependable Machine Company, Mr. A. R. Hough, vice president of Hough Shade Corporation said:

"Two years ago, we substantially expanded our facilities for producing basswood mouldings and slats used in the manufacture of such products as Vudor porch shades, Belmar window shades, and Ra-Tox Fashionfold doors. As part of this program, we installed two Dependable Moulders. Since their installation these units have been in continuous two shift service, five or six days a week.

"A recent check of our maintenance records indicates that practically no repairs or parts replacements have been necessary on these machines during the two year period.

"Our operation involves relatively short runs of half a dozen different set-ups. Changing from one set-up to another has been rapid through the use of extra pre-set interchangeable cartridges and by the easily accessible heads. We are using the Dependable Grinder Jointer and servicing our knives on the spindle cartridge which has given us a very high quality moulding job".

You too can break all production records with a Dependable Moulder. Call or write for full information today.

Dependable DF
MACHINE COMPANY, INC.
GREENSBORO, NORTH CAROLINA, U. S. A.

S. M. Nickey, Jr., Nickey Bros., Inc., Memphis; Thomas O'Melia, Scotch Lbr. Co., Fulton, Ala.; and Lyle Motlow, Williams & Voris Lbr. Co., Chattanooga, Tenn.

Research Expansion. Weyerhaeuser Timber Co.'s enlarged research and development facility at Longview, Wash. has been completed and has been named the Technical Center — Longview, changed from Development Center.

James R. Roberts, manager, has announced the following staff appointments: Dr. A. S. Gregory is manager of applied research; H. A. McKeever, manager of process development; E. M. Williston, manager of product development; and A. S. Mark, office manager.

New Robins Building. E. A. Robins Veneers Co., High Point, N. C., has moved into new and much larger quarters in High Point. The company operates as manufacturers' representatives for domestic and foreign face veneers, commercial veneers and hardwood lumber.

4-H Scholarship Winners. At a dinner given in Chicago recently during the National 4-H Club Congress, four boys were awarded $300 college scholarships as winners of the 4-H forestry contest sponsored by American Forest Products Industries, Inc. They are: Douglas Johnson, Braham, Minn., David L. Gerwitz, Buffalo, N. Y., William Hilger, Lena, La., and Ned N. Pence, Mackay, Idaho.

Sectional winners are: Benton Cavin, Coarsegold, Calif., and Steve Ragland, Jr., Atoka, Tenn., who are also alternate winners of scholarships along with Ronnie Harkness, Shirland, Ill., and Daniel Marshall, Evans, Ga.

PERSONNEL CHANGES

Robert B. Pamplin has been elected a director of Georgia-Pacific Plywood Co., New York. He is financial vice-president and secretary of the company.

R. R. Seibel

Richard R. Seibel has been appointed plant manager of G. M. Diehl Machine Works, Wabash, Ind. Before joining Diehl, he was assistant to the president of Lynch Corp, Anderson, Ind., and plant manager of Lectrolite Corp., Defiance, O.

Gene C. Brewer has been elected a director of U. S. Plywood Corp., New York. He joined the company in 1937, was elected a vice-president in 1954, and since has directed its 16 manufacturing operations in California, Oregon and Washington.

Joseph F. Beckman has been appointed assistant director of sales and manager of steel industry sales by Signode Steel Strapping Co., Chicago. He previously served as district sales manager in New Orleans and Los Angeles.

James E. West and **E. T. Thompson, Jr.**, have been named sales managers of the Los Angeles and St. Louis branch offices, respectively, by Minnesota Mining & Mfg. Co., St. Paul, for its fibrous and industrial trades tape division.

Hugh M. Lineweaver is the new merchandising manager for Forest Fiber Products Co., Forest Grove, Ore. He was formerly sales promotion director, and will now supervise publicity, advertising, market research, and public relations.

I. J. Blondon has been appointed general manager of the Packing Equipment Division of Food Machinery & Chemical Corp., Riverside, Calif. Other appointments were those of **J. M. Devers** as divisional director of marketing, a new post, **L. M. Emanuel** as sales manager for Fruit and Vegetable Industries, **Lee Harrel** as manager of the Southwest district, and **Newell Carter** as manager of the division's Santa Paula Branch office.

Walter A. St. Clair has been promoted

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WILLIAM'S "NO-NIFE" HOGS

Can Do For You:

1. Increase The Heating Value Of Your Wood Scrap!

When reduced to chip form by hogging, wood burns more evenly—gets *all* the heat value possible. Unhogged slabs, trimmings, large pieces, restrict air flow, smother fire, result in inefficient combustion.

2. Improve Quality Of Wood Flour And Sawdust!

Processing wood scrap with a Williams Hog, for resale in the form of wood flour or sawdust, assures more uniform grinding and sizing—much lower labor costs—reduced power requirements.

3. Reduce Handling Cost As Much As 75%!

One man firing wood in chips can handle the same tonnage as would require three men if fuel scrap remained in awkward lengths and pieces that necessitate individual handling.

4. Your Operation May Permit Complete Automatic Handling

Williams has made many automatic installations to hog and convey waste wood to stoker or boiler at tremendous savings in handling expense. Other installations to automatically grind, separate and package wood flour and sawdust result in phenomenal reductions in cost.

Williams equipment will actually pay for itself in a few months, then continue to produce extra profits for many years. Investigate now!

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OLDEST AND LARGEST MANUFACTURER OF HAMMER MILLS IN THE WORLD

to assistant sales manager of Hyster Co.'s Eastern Industrial Truck Division. He will work with all phases of Hyster's Eastern industrial truck sales, with headquarters at the Danville, Ill., factory.

Paul R. Vickery is the new sales manager for lumber products of the Forest Products Division of Olin Mathieson Chemical Corp., New York. He will be responsible for sales of all lumber products including southern pine, hardwood, hardwood flooring, creosoted and wolmanized treated materials, and casual furniture.

Georges L. Houle has been appointed chief of staff of Atlas Plywood Corp., Boston. This new position is the first step in developing a new staff department embodying industrial engineering, personnel relations, and corporate organization, according to President R. A. Muller.

Judd Greenman has retired as general manager of The Long-Bell Lumber Co.'s Veronia, Ore., Division, and **C. L. Anderson** has been appointed to replace him, according to an announcement made by J. D. Leland, president. Mr. Greenman has been in lumber manufacturing operations on the West Coast for more than 50 years. Among his many other outside activities, he served in various official capacities with both the West Coast Lumbermen's Assn., and National Lumber Manufacturers Assn., of which he was president this year.

Theodore G. Montague has been elected chairman of the board and **Harold W. Comfort** president of Borden Co., New York. Mr. Montague, president since 1937, joined the company in 1928, as did Mr. Comfort.

Larry T. Marshall has been named manager of M & M Wood Working Co.'s California Timber Division. He will be concerned with long-range plans for a sustained yield timber harvesting program in northern California.

Truman Jones

E. W. Forth

Truman Jones and **Edward W. Forth** have been elected vice-presidents of DeWalt Inc., Lancaster, Pa. Formerly general sales manager, Mr. Jones will be in charge of sales, and Mr. Forth, previously general superintendent, is in charge of manufacturing. **Henry J. Erisman**, who has been serving as assistant secretary, has been named comptroller of DeWalt. Another promotion has been announced, that of **Robert A. Hummert** as Chicago district sales manager.

Charles H. Abbott has joined Atlas Plywood Corp., Boston, as sales manager of the Door and Panel Division, and **Alfred M. Blakesley** has been appointed sales manager of the Container Division, according to an announcement by Bert Cole, vice-president in charge of sales. Prior to their appointments, Mr. Abbott had been vice-president and general sales manager of General Plywood Corp., Louisville, Ky., and Mr. Blakesley was sales manager of the Door Division of Atlas.

NOTES ABOUT SUPPLIERS

American Cyanamid Co., Cincinnati, has acquired the business and assets of the Formica Co., also of Cincinnati. Stock exchanges are now being made, but Formica will continue to operate under the direction of its present management as an additional unit in the Cyanamid organization. Plans for a $2½ million expansion program at Formica's Evendale, O., plant are being continued to yield it a 20% increase in sheet laminating facilities.

Design Conference. Concurrently with the first Design Engineering Show at Convention Hall in Philadelphia, May 14-17, the American Society of Me-

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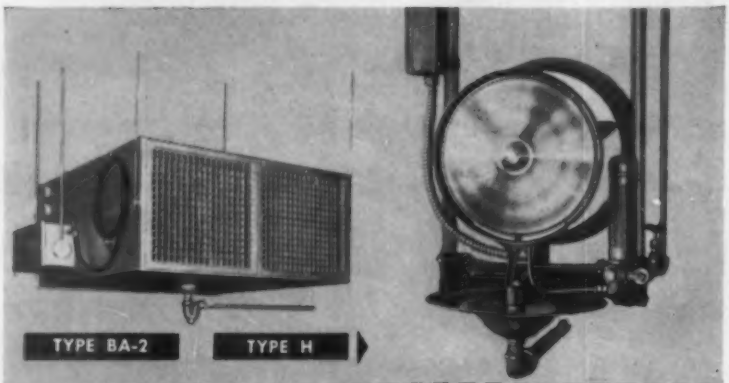

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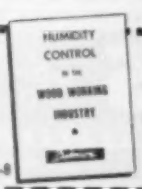

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chanical Engineers will hold a conference to study industry's problems in design engineering. Included will be discussions on attracting suitable men to the field, cost reductions, selection of engineering materials, and the effects of the trend toward miniaturization.

NAM Vice-President. Ernest G. Swigert, founder and president of Hyster Co., has been elected national vice-president of National Association of Manufacturers. He has served on NAM's board of directors for a number of years and during 1955 served as regional vice-president of the organization.

Power Crane Meeting. The Power Crane and Shovel Assn., at its annual meeting elected the following new officers: President D. W. Lehti, Link-Belt Speeder Corp., Cedar Rapids, Iowa; Vice-President M. B. Garber, Thew Shovel Co., Lorain, Ohio.

New directors are: P. H. Birckhead, Bucyrus-Erie Co., South Milwaukee, Wis., for a term of three years, and C. B. Smythe, Thew Shovel Co., Lorain, Ohio, for a term of three years. Herbert S. Blake, Jr., is the executive secretary of the association, with permanent headquarters in New York City.

South Shore Machine Co., Quincy, Mass., has acquired exclusive manufacturing rights for the Milliken precision nailing and pinning machine, formerly produced by Press Wireless Laboratories.

Carboloy Dept. of General Electric Co., Detroit, has reorganized its sales group by establishing four sales organizations for carbide products and a separate unit for permanent magnets.

In the new organization J. D. Kennedy, formerly head of the South Central district, is manager of component sales; F. J. Staroba and A. E. Glen continue as managers of cutting tool and die sales, respectively; R. F. Parker is manager of mining sales; and M. E. Hartl continues as manager of magnetic material sales. With the exception of Hartl, located at the Edmore, Mich., plant of Carboloy, all make their headquarters in Detroit.

E. R. Almdale and A. M. Thomson continue as managers of the Atlantic and East Central districts, respectively. The Atlantic district office in Newark, N. J., absorbs the former New England district, and the former Allegheny district is consolidated with the East Central district office in Cleveland.

H. H. Jason, former manager of the New England district, is now manager of the Midwestern district, Chicago, succeeding L. L. DeCoster, transferred to Detroit on special assignment with K. R. Beardslee, general manager of Carboloy Dept. The territory formerly covered by the South Central district is absorbed by the Chicago office.

Both J. A. Muldoon and R. D. Mack remain as managers of the Michigan district, Detroit, and Pacific district, Los Angeles, respectively.

DEATHS

P. W. Plumly of the P. W. Plumly Corp., died Dec. 9, at his home in Winchester, Va., after the last of several strokes in recent years. An active member of the Appalachian Hardwood Manufacturers, Inc., as a manufacturer himself, he also operated a hardwood flooring plant and a retail lumber busienss. He was buried in Washington, Pa.

C. J. Williams

Charles J. Williams, chairman of Moore Dry Kiln Co., died in his home at Jacksonville, Fla., on Jan. 2 after a long illness. Born in North Carolina, he moved to Florida in 1903, and entered the kiln business in 1906 as a partner of Lafayette Moore, and since 1922 has been chief executive officer of the Moore organization.

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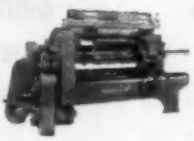

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kiln drying lumber, veneer, and other forest products, he and his associates obtained many patents which have contributed to this cause. Having established the first Moore plant at Jacksonville, Mr. Williams was also instrumental in constructing a second plant at North Portland, Ore., in 1919, and two additional plants later at Vancouver, B. C., and Brampton, Ont.

For many years Mr. Williams was an elder and very active member of the First Presbyterian Church in Jacksonville, and was a trustee of Davidson College. He was also a director of the Atlantic National Bank, Jacksonville, and of the Southern States Industrial Council, Nashville, Tenn., and a trustee of the Jacksonville Junior College.

In order to insure his philanthropic activities in future years, Mr. Williams created the Charles J. Williams Foundation in 1952. The beneficiaries are a number of religious, educational and charitable organizations in which he was interested.

Surviving are his wife, Mrs. Edna Sproull Williams; a brother, Pat M. Williams Sr., North Wilkesboro, N. C.; four sisters; and nieces and nephews.

William F. Franket, secretary of Wood-Mosaic Co., Louisville, and president of its subsidiary Parkay, Inc., died of a heart attack at his home in Louisville, Dec. 1. He joined Wood-Mosaic in 1918 and helped develop its thin type of parquetry flooring used in the White House and Buckingham Palace. Mr. Franket was a former president of the Indiana Lumbermen's Assn. when Wood-Mosaic was located in New Albany, and of American Walnut Manufacturers Assn., and member of Appalachian Hardwood Assn.

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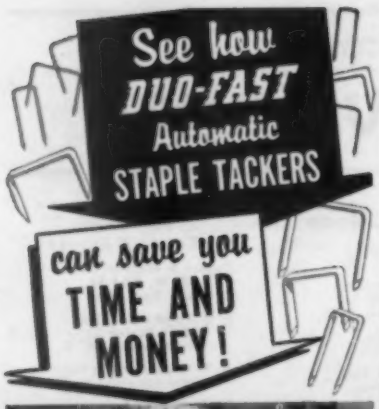

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Wood Salutes

ARTHUR TEMPLE, JR.

To a large extent the present, and certainly the future, progress and prosperity of the wood industry rest in the hands of the many capable younger men who have made their presence felt in all segments of the industry especially during the past 10 years. Firmly established well up in the forefront among them is Arthur Temple, Jr., of Diboll, Texas, one of the more dynamic young leaders not only in southern lumber but in national lumber, wood container, forestry, building and related fields.

Currently president of the Southern Pine Association and a vice-president of both the National Lumber Manufacturers Association and the National Wooden Box Association, Arthur Temple, Jr., at 36, has gained nationwide recognition for his enthusiastic pursuit of improved utilization and manufacturing standards as well as for the sweeping modernization programs he has spearheaded in his own companies, notably the Southern Pine Lumber Co. at Diboll and the Temple Mfg. Co., Dallas, the Southwest's largest beverage case manufacturer (*see September 1954* Wood & Wood Products).

It is generally conceded that under his able direction the Southern Pine Lumber Co. has become one of the best integrated of all forest product manufacturers. His progressive ideas extended well beyond the technical end into the human elements of his diversified business interests. His personnel program includes job evaluation and merit rating, retirement, hospitalization, paid vacations and other enlightened employee relations features.

Grandson of the founder and son of the second president of the varied Temple industries, young Arthur got his elementary schooling in Texarkana, Ark., and went to the University of Texas which he left to enter the retail lumber business in Paris, Texas, and later in Lufkin. Today he heads up a line of retail yards under the name of Temple Builders Supply, Inc. He also organized and is president of Temple Associates, general contractors, the Temple Associates Box Factory, both in Diboll, and the Temple Steel Products Co., Lufkin, which makes hinges and hasps for wooden boxes.

Mr. Temple became general manager of the Southern Pine Lumber Co. in 1948 and was elected president in 1951 at the ripe old age of 31. He is president or vice-president of a number of other organizations in such fields as investments, housing, railroading, contractors' supplies and wood products.

As a civic leader he has been a member of the State Board of Education, president of the Lufkin Club, trustee of the Temple Foundation and Lufkin Memorial Hospital, and a director of Diboll's Episcopal Day School. He was voted one of five outstanding young men of Texas by the Jaycees, holds the VFW Medal of Merit (a Navy veteran of World War II), and is an honorary member of the Texas Association of Future Farmers.

He and his charming wife, Mary Macquiston Temple, have a daughter 16 and a son 14. And though nobody knows how he finds time to shoulder a gun or cast a fly, Arthur Temple, Jr., is an enthusiastic sportsman, hunting and fishing in the forests of East Texas with the same vigor that he devotes to his first love, the improvement of lumber manufacturing standards.

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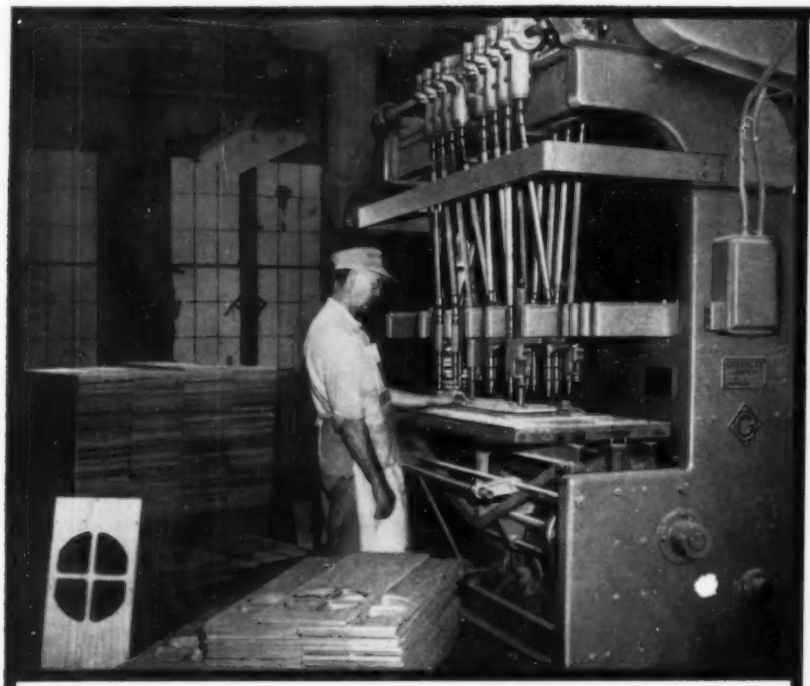

On-the-job photo, Mid-State Wood Products Corp.

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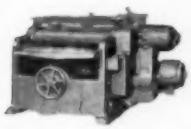

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